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THE
PRANG PRIMARY COURSE
IN
ART EDUCATION

Suggestions for the Use of Form Study, Drawing, and Color

IN THEIR RELATION TO ART EDUCATION
AND ALSO IN THEIR RELATION TO GENERAL EDUCATION
IN PRIMARY SCHOOLS

BY

MARY DANA HICKS
Director of The Prang Normal Art Classes
AND
JOSEPHINE C. LOCKE
Supervisor of Drawing, Chicago

PART II
SECOND PRIMARY YEAR

BOSTON
THE PRANG EDUCATIONAL COMPANY
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AUTHORS' PREFACE.

About five years ago the little book called "The Use of Models for Form Study and Drawing in the Primary Schools" was published. The educational basis of "The Use of Models" was given in the authors' preface and is here quoted: —

"This Manual is, we believe, the first work of its kind. It is not claimed, however, that the idea of mental development presented in its pages is new. Psychological and physiological investigators have clearly shown that the harmonious exercise of the two primal senses, touch and sight, should be made fundamental in the education of children. While this truth is now very generally recognized, but little has been done, save in the Kindergarten, toward making use of these two senses as a basis for mental development. It is true several works have been published on Form Study and Object Study; and in some schools much is made of Modeling, Folding, Stick-laying, Drawing, etc. But we are not aware of any work heretofore published in which these various features have been brought together and integrated in a series of exercises with form models, and so arranged as to secure mental training through the activity of the sense of touch as well as of the sense of sight."

"It has been the aim of the authors of this work to give such a series of exercises with suitable models. Considered, therefore, as a course of exercises in Form Study and Drawing, which has in view mental development through the combined use of the hand and the eye, the work is wholly new."

The ideas and methods presented in "The Use of Models" have been widely introduced into primary instruction, and have been largely instrumental in making the methods of the "new education" practical in primary schools. "The Use of Models" was, however, regarded only as a beginning in the development of children in primary schools through self activity, and the authors looked forward with confidence to the broadening of all primary work through these methods. The results of the past five years have fully justified these anticipations and there is now a growing demand for the unification of all primary work around the Form Study, Drawing, and Color.

The little book now presented is the outgrowth of the experience gained in carrying out work in this direction. The authors offer these "Suggestions" in the hope that they may help others who are ready to go forward. It has been the aim to present the work so as to call forth the fullest observation, thought and expression, in a natural manner, by the use of models and objects, that appeal to the children for exercises in modeling, drawing, manual training, and color. It has been the aim also to lead the thought of the teachers to the possibilities of Form, Drawing, and Color as the foundation for all primary work; and above all it has been the aim to provide for the development of the imagination and of the creative activity of the children so that they may constantly turn toward the enjoyment of beauty and toward the production of their own beautiful ideals, thus leading them to the world of art which Froebel calls "the visible revelation and expression of the invisible spirit of man."

In the preparation of this work, the authors have had the cordial co-operation of the leading supervisors of drawing in the country. They desire to acknowledge the very great assistance received from Miss Elisa A. Sargent, Instructor in The Prang Normal Art Classes, in the preparation of the text and illustrations.

They desire also to acknowledge most gratefully the aid received from Miss Katherine E. Shattuck, Normal Art Instructor, Pratt Institute, Brooklyn, N. Y.; Miss Ada M. Laughlin, Supervisor of Drawing, St. Paul; Miss Augusta L. Balch, Supervisor of Drawing, Somerville, Mass., and Miss Stella Skinner, Supervisor of Drawing, New Haven, Conn., in the general development of the work, and from Mrs. Lucy Booth, Supervisor of Drawing, Scranton and Hazleton, Pa., in the illustrative lessons and in the work in Nature Study and in Illustrative Drawing; as well as the valuable counsel of Mrs. Hannah Johnson Carter, Director of the Art Department of Drexel Institute, Philadelphia; Mrs. T. E. Riley, Supervisor of Drawing, St. Louis; Miss Sara A. Fawcett, Supervisor of Drawing, Public Schools, Newark, N. J.; Mrs. S. E. Fuller, Supervisor of Drawing, Public Schools, Washington, D. C.; Mr. T. J. Richardson, Supervisor of Drawing, Minneapolis; Miss Kate McCrea Foster, Instructor in The Prang Normal Art Classes; Miss Katherine M. Ball, Chicago; Miss Wilhelmina Seegmiller, Supervisor of Drawing, Allegheny, Pa.; and Mr. Charles M. Carter, Supervisor of Drawing in Denver, Colorado, given during the Prang Conferences in the summer of 1892.

MARY DANA HICKS.
JOSEPHINE C. LOCKE.

BOSTON, February 22, 1893.

CONTENTS.

PAGE
FORM STUDY vii
GENERAL SUGGESTIONS viii

PART I.

FIRST PRIMARY YEAR — DISTRIBUTION OF TIME 2
TO BE STUDIED — OBSERVATION — EXPRESSION — TIME 3
SECOND PRIMARY YEAR — INTRODUCTION 5

CHAPTERS I, II AND III.

SPHERE, CUBE AND CYLINDER, OBJECTS. MODELING. SEEING AND DRAWING. ARRANGING 20

CHAPTERS IV, V AND VI.

SPHERE, HEMISPHERE, PRISMS AND OBJECTS. MODELING. SEEING AND DRAWING. ARRANGING 39

CHAPTERS VII, VIII AND IX.

ELLIPSOID, OVOID, EQUI. TRI. PRISM AND OBJECTS. MODELING. SEEING AND DRAWING. COLOR 51

CHAPTERS X, XI AND XII.

PATTERN DRAWING. MANUAL TRAINING. SEEING AND DRAWING. COLOR. 63

CHAPTERS XIII, XIV AND XV.

NINE SOLIDS. COLOR. SEEING AND DRAWING. MODELING. HISTORIC FIGURES 71

CHAPTERS XVI, XVII AND XVIII.

MANUAL TRAINING. COLOR. SEEING AND DRAWING. HISTORIC FIGURES . 84

PAGE

CHAPTERS XIX, XX AND XXI.

Manual Training. Color. Seeing and Drawing. Historic Figures . 96

CHAPTERS XXII, XXIII AND XXIV.

Corners, Angles. Manual Training. Seeing and Drawing. Historic Figures 105

CHAPTERS XXV, XXVI AND XXVII.

Cone, Square Pyramid, Vase Form, Objects. Modeling. Seeing and Drawing. Arranging 115

CHAPTERS XXVIII, XXIX AND XXX.

Drawing Views. Modeling. Seeing and Drawing. Arranging . 122

CHAPTERS XXXI, XXXII AND XXXIII.

Drawing Patterns. Manual Training. Seeing and Drawing. Plant Forms 131

CHAPTERS XXXIV, XXXV AND XXXVI.

Drawing Views. Modeling. Seeing and Drawing. Plant Forms . 140

APPENDIX I.

Expression in Nature Study 147
Outline of Lessons 148
Natural Phenomena 152
Study of Plant Life 161
Study of Animals 171
Study of Minerals 178

APPENDIX II.

Other Illustrative Drawing 181
Illustrative Drawing for Teachers 195

FORM STUDY AND MODELS.

FORM-MODELS: Solids, Sticks.

It is now recognized that Form should be studied not only by the eye but also by the hand; that touch furnishes "the most direct mode of apprehending things," and "seems to bring us into the closest relation to external things."[1]

Any outline of work for form study should, therefore, make definite provision for perception of form by touch; the Form-Models must not only be seen by the children, they must be in the hands of every child.

By the proper use of these Models, children gain their ideas of form through the combined impressions of touch, sight, and the muscular sense.[2] Ideas thus gained are real to the children, having been acquired through their own experience.

The exercises which follow, for the use of Models, aim to develop in the minds of children complete mental images of the type-forms, with details of surface, contour, face, edge, corner; to give them ideas of location, position, direction, size, proportion, distance, and appearance; and to lead them to see, to enjoy, and to produce beauty of form and of arrangement.

These ends are to be reached by direct exercises with the Models and Objects based on them, accompanied by practice in cutting, folding, and drawing, as well as by the free use of language.

---

[1] Read Sully, Outlines of Psychology, Chapter VI., *On Perception.*

[2] Ibid., Chapter V., *Muscular Sense.*

GENERAL SUGGESTIONS.

Models.

NUMBER OF MODELS NECESSARY. — The number of models supplied for children's use should equal the number of children in the class, thus providing a model for every child.

The exercises should be so planned that every child will have an opportunity to handle the models, and thus obtain, through actual experience, the ideas to be developed.

If, however, models can be supplied for but half the class, they can be passed from one row of children across the aisle to the next row of children. An exercise having been partially given to one row can then be continued with the next row.

There should be a set of models of a larger size for the teacher's use.

Language.

In the first lessons in form study, cultivate the free use of language in complete sentences with each exercise. Having developed an idea, give the children the correct term to express it. Fix this term in the minds of the children by repeated application, and be careful that they use the term in speaking. The terms to be especially developed in each exercise are printed in full-faced italic letters.

As the work goes on it will be found that there is much material for both oral and written language in the lessons in form study. The children should be encouraged to illustrate their written work whenever there is any point of interest in the lesson which will admit of expression by drawing.

Making.

One of the most important means of developing ideas of form is by making, first, the type-forms and afterwards objects based on them. "Making" is also a means of *expression* for ideas of form, and still further affords an opportunity for the exercise of the creative ability of children, — an ability which is too frequently ignored in educa-

Making.

tion. The type-forms and objects based on them can be made from clay and paper in class exercises.

This work is not only of value in the Form Study, it is an excellent beginning in manual training. In addition to the cutting and making, exercises in such folding as can be used in sewing will be found.

Arrangement.

Exercises in *arrangement* of models and tablets furnish another means of studying form which appeals directly to child-nature, and also lays the foundation for future work in decoration. In all the exercises in arrangement, endeavor to awaken and develop the idea that the arrangement of forms may be made pretty and pleasing, or that it may be such that it will not be pleasing. Foster a desire on the part of the children to make pleasing arrangements.

Physical Training.

It will be well to cultivate free movement, giving practice a few moments every day in some simple movements which

Physical Training.

can be made a class exercise, the children standing or sitting as the exercise may require. These movements should be such as to render flexible the muscles of the shoulder, arm, and hand, so that when drawing is begun there will be a ready movement in all required directions.

The illustration shows *one* set of exercises in movement.

Hands.

During all the lessons from the solids, children should be led, by repeated exercises, to know which hand is the right hand and which the left, and to form so strong a habit of using the hand which is called for, that it will become registered in the muscles, and the response will be automatic.

Drawing.

Give children every opportunity possible to work freely with chalk on the board, and with charcoal or pencil upon paper.

It is extremely important to the children and to the teachers that the children draw freely. The children should be encouraged from the first in the use of the chalk, charcoal, and pencil, that these may become familiar instruments, in the use of which the children may learn to see the means of reflecting themselves. The teacher should gain, from the unconscious expression of the children in drawing, a knowledge of *what* and *how much* the children see, in order to build future work upon that knowledge.

Drawing.

When regular exercises in drawing begin, training in position, pencil-holding, movement, and drawing, as indicated in below must be systematically and regularly pursued.

Freedom of Movement.

The importance of freedom of movement in drawing cannot be overestimated. It produces lightness of touch, quickness in execution, begets confidence in one's ability to draw, and, when acquired by a class of pupils, materially lessens

Freedom of Movement.

the work of the teacher. Experience among thousands of pupils shows conclusively that too much stress cannot be laid on the necessity for the early development of freedom of movement. The ability to sketch rapidly and easily an illustration of a thought awakened in the mind, cannot be attained without it.

Position.

The children should sit on the left half of the seat facing the desk. They should sit erect, feet flat on the floor, the eyes never nearer the paper than is necessary for a clear view of the lines. They should not bend forward unnecessarily, and should learn to work at a distance.

Paper.

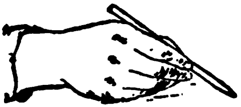
The paper should be directly in front of the child, pushed back on the desk, the long edges parallel to the long edges of the desk. NEVER TURN THE PAPER. If the paper is turned, pupils do not obtain the necessary practice in drawing lines in the three different directions.

Pencil.

The pencil should be of a soft medium grade (the Prang School Pencil SM is of a good quality) for all freehand work. It should be sharpened to a round but quite blunt point, and used for drawing only. When the pencil is worn away it should be lengthened by a pencil-holder. Short pencils should not be used.

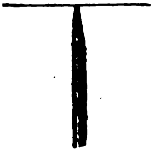
Pencil. Holding

The pencil should be held lightly *three* or *four inches* from the point, so that it will have the support of the middle finger, and be held by the thumb and forefinger. Pencil-holding without touching the paper should be practiced by itself before beginning to draw.



Pencil Holding.

The pencil should always be held at right angles to the line to be drawn when drawing straight lines, and at an angle of about 30° to the paper.



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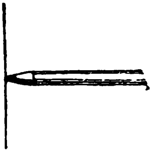

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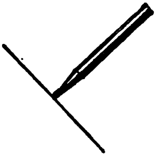


Fig. 3.

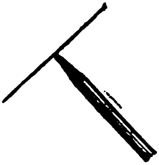


Fig. 4.

Drawing.

Vertical lines should be drawn from top to bottom; horizontal lines from left to right; oblique lines, as a rule, from top to bottom.

Lines at the left and top should be drawn first, as a rule, though all parallel lines should be drawn in succession when practicable.

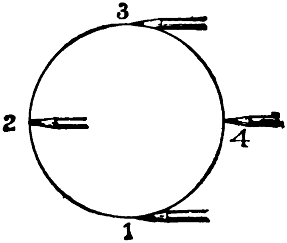


Fig. 5.

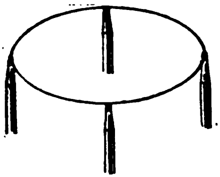


Fig. 6.

Circles and vertical ellipses should be drawn from the lower end of the imaginary vertical diameter, holding the pencil from left to right all the time. In drawing horizontal ellipses the pencil should be held as for a horizontal line. Circles, ellipses, and ovals should be sketched with one sweep of the pencil.

ALL LINES SHOULD BE DRAWN CONTINUOUSLY WITHOUT STOPPING OR RETRACING.

Form Study and Drawing in connection with other studies.

With the growth in importance of Form Study and Drawing as an independent subject has come an appreciation of its educative value, and also of its value as an aid in other school subjects. Wherever an attempt has been made to use drawing seriously as a means of illustrating such lessons in reading, spelling, geography, language, arithmetic, and science as depend upon the consideration of objects for the purpose of learning or estimating their facts, it has been found that not only has the interest in all divisions of the subjects increased but also that the children have become much stronger in observation, investigation, and calculation, and more confident in oral and written expression.

The reasons for this are obvious. The children are allowed to observe for themselves, and to record that observation, the teacher dealing only with the results. The results, unlike those of any other form of expression, show the relation of parts and of size at once; that is, *drawing is the most graphic means of expression*, presenting as it does the appearance of a whole and at the same time showing the related parts. Because of this vividness of presentation it affords the best possible means of mutual understanding between teacher and pupil, and, therefore, the best opportunity for a proper readjustment of the pupils' ideas. In other words, drawing, while still giving the pupil perfect freedom in observation and expression, brings the teacher and the pupil nearer together, thus making it possible for the pupil to gain necessary assistance, since the teacher sees more clearly what his needs are.

Form Study and Drawing in connection with other studies.

The work in Form Study and Drawing will produce comparatively small results, unless teachers recognize its close relation to everything about us, and hence the use that can be made of it in all the elementary as well as many of the higher studies. The children should be constantly observing Form, and as constantly expressing it through Drawing. The teacher's work at this stage should be so laid out that Form Study and Drawing will be constituent parts of all school-work, whether Number, Geography, Language, Nature Study, History, or Manual Training. Children need no urging to do illustrative work; they need only permission and encouragement. If such work is arranged so as to employ what they have learned in their regular lessons in Form Study and Drawing, the regular instruction will help the free use of drawing in other work, and the free drawing will help the regular instruction. Suggestions will be given from time to time for the use of drawing in the daily lessons.

Manual Training.

Both educators and practical men are now seeking the introduction of manual training into regular school work. Such training, will, however, fall short of the desired results, both educational and practical, unless pursued in connection with regular, systematic, thoughtful work in Form Study and Drawing, as Form is the basis of all work in manual training. Beautiful form as well as good workmanship should be sought in all manual training. To some, manual training concerns only the actual processes of construction, with the attendant thought and necessary skill. This should not be so; every lesson in manual training should be a lesson leading toward beauty of form and also to harmony of color where color is used.

Drawing in Nature Study.

Nature study has become so prominent a feature in all school courses, and the use of drawing in connection with the observation of nature is of so great importance that it

Drawing in Nature Study.

has been thought best to suggest a course of lessons in this subject and to show how drawing may be used as an effective means of promoting not only an interest in the work, but the best kind of observation. The suggested course will be found in Appendix I., pages 147–180.

Illustrative Drawing.

The necessity for giving the children an opportunity for free expression by drawing has long been admitted, and it is now thought best to offer suggestions for a series of lessons in illustrative drawing, with directions for carrying them out. These lessons will be found in Appendix II., page 181.

Color.

The study of color is not only valuable because of the added interest it brings to the study of form, but also because of the means which it affords for mental development, and because of the necessity for its appreciation in everyday life. A cultivated color sense is as necessary a part of either a practical or a polite education as the power to use good language. Provision is made in the year's work for the observation of color and the study of color relations, giving the children the opportunity to study color both absolutely and æsthetically.

Historic Ornament.

It is thought that, since several simple historic figures — as the cross, quatrefoil, trefoil, etc. — come frequently under the observation of the children, it will be possible to give them something of the history of these figures. A series of lessons is given for the purpose of awakening an interest in simple historic figures, and also to enable the child to recognize, name, and draw or cut such figures.

GENERAL PLAN FOR THE WORK.

The work is laid out in thirty-six chapters, each chapter furnishing the work of a week. The exercises in each week have a sequential relation to each other and to the work preceding and following it.

The following points are to be noted: —

Exercises in observation of Form precede exercises in expressing ideas of Form through modeling, or folding, or tablet and stick-laying, or drawing.

Exercises in observation of Color precede exercises in expression of Color through laying of color tablets and through the use of colored paper.

The modeling lessons are given in the first and last parts of the school year, to avoid the use of clay through the winter months.

The second lesson of each week is given to an exercise which will require more time *than the other lessons.*

In each week provision is made for one exercise chosen by the teacher from the following options.

(*a.*) Expression in nature study. (*b.*) Other illustrative drawing. (*c.*) Review. (*d.*) Additional form study.

These options may be used at the discretion of the teacher; if used, they may be taken either in connection with a regular drawing lesson, or as separate lessons.

Appendix I. contains an outline of lessons for Expression in Nature Study, together with illustrative exercises, for this option.

Appendix II. pertains to other Illustrative Drawing, with illustrative exercises and four blackboard studies for this option.

Appendix III. pertains to Paper Folding with directions for and illustrations of many different articles made by the folding of paper.

The work should not be dry and technical and formal but should be developed in a winning, sympathetic way which will bring delight to the hearts of the children.

> "To let the new life in, we know
> Desire must ope the portal."

SECOND PRIMARY YEAR.

DISTRIBUTION OF TIME.

Form Study	24	Lesson	Periods,	24	Lessons
Clay	25	"	"	25	"
Regular Drawing	53	"	"	53	"
Illustrative Drawing	35	"	"	35	"
Color	22	"	"	22	"
Cutting, Making, and Folding	18	"	"	18	"

SECOND PRIMARY YEAR.

1. TO BE STUDIED.

(a.) **TYPE SOLIDS IN REVIEW:**

Sphere, cube, cylinder.
Hemisphere, square prism, and right-angled triangular prism.

(b.) **NEW TYPE SOLIDS:**

Ellipsoid, ovoid, equilateral triangular prism, cone, square pyramid, and vase form.

(c.) **NATURE-FORMS AND COMMON OBJECTS:**

Objects resembling these type solids.

(d.) **PICTURES:**

Pictures illustrating these type solids and objects.

2. OBSERVATION.

(a.) **OF FORM:**

In nature and in common things.
In type solids.

(b.) **OF COLOR:**

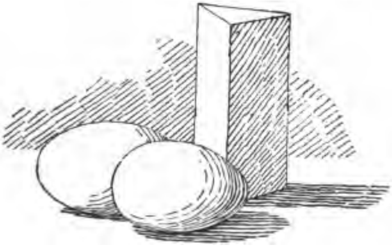
In nature and in common things.
In type colors.

3. EXPRESSION.

(a.) *By modeling in clay.*
(b) *By laying tablets.*
(c.) *By paper folding, cutting, and making.*
(d.) *By drawing with chalk, charcoal, and pencil.*
(e.) *By oral and written language.*

4. TIME.

Ninety minutes a week.



"I stood in silence and apart,
And wondered more and more to see
That shapeless, lifeless mass of clay
Rise up to meet the master's hand,
And now contract and now expand,
And even his slightest touch obey."
— *Longfellow.*

"Education originally, and in its first principles, should necessarily be passive, following, (only guarding and protecting) not prescriptive, categorical, interfering."

"Rest, joy, and smiles indicate whatever in the child's feeling is adapted to the pure undisturbed development of his nature. Unrest, sorrow, tears, indicate in their first appearance whatever is opposed to the development of the child, of the human being." — *Frœbel.*

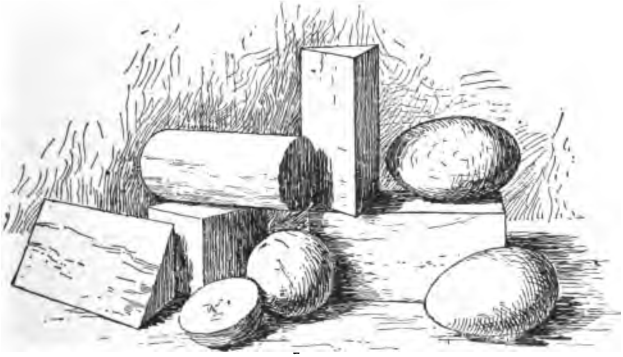
"Drawing properly stands between the word and the thing, shares certain qualities with each of them and is, therefore, so valuable in the development of the child. The faculty of drawing is as much innate in the child, in man, as is the faculty of speech, and demands its development and cultivation as imperatively as the latter." — *Frœbel.*

"The very first thing I see in the child is sympathy, and that is the first thing I offer him. I take my own soul with me to school, I could not go to the child without it; in the contact of my soul with the soul of the child lies all my hope of helping even his mental development." —*Louisa P. Hopkins.*

"The educative effect of art is also ennobling, for it leads to the preference of an ideal which is not a selfish one." — *William T. Harris.*

PART II.

SECOND PRIMARY YEAR.



INTRODUCTION.

The work of the second year is arranged with the thought in mind that the children have already handled and observed in a general way the sphere, cube, cylinder, hemisphere, square prism, and right-angled triangular prism; that they have modeled these solids, and have had abundant opportunity to express freely by drawing *what they see* of the solids and also of objects like them.

In developing ideas of the type forms in the first year, familiar objects resembling the solids are presented first, in order to take advantage of what the children already know, and also to relate the work of the schoolroom with home surroundings as much as possible. As the children have now become almost as familiar with school life as with home surroundings, it is not thought necessary to pursue this method to such an extent in the second year — although the environment of the children should never cease to be a considerable factor in the work.

It is felt that the children should now have formed good habits of observation, and that, having been led, in a general way, to associate all the objects with which they come in contact — whether at home, in the streets, the woods, the fields, or in the school-room — with the solids they have been studying, they are now prepared to compare these forms, to acquire more definite information concerning them, and to fix their names. The first six weeks are devoted to the review of the six forms already observed by the children, the study involving a considerable amount of comparison and a more systematic observation of the solids. The drawing is, however, still a representation of the appearance of objects as wholes for the sake of securing the interest of the children before proceeding to the more definite work.

The remainder of the year is given to the observation of the ellipsoid, ovoid, equilateral triangular prism, cone, pyramid, and vase form. This observation will, from the first, be so directed as to lead to a closer study of the solids and greater accuracy of expression, both by language and drawing, than it has been thought best to require in the earlier work.

In order to prepare the teacher to take up the work of the year in a broad and yet systematic way the following descriptions and careful comparisons of the forms to be studied are given.

It is not expected that the attempt will be made to lead the children to so extended a study of the forms, but it is felt that the teacher should know and consider these points before presenting the solids to the children, in order that she may be able to observe with more interest and appreciation what they find in the types.

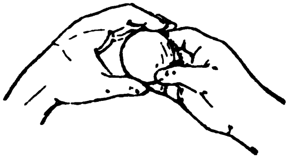
A few general suggestions as to the method to be pursued in developing ideas of form are stated before the descriptions of the forms are given in order to give an opportunity to consider the manner of presentation while comparing the different forms.

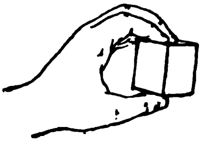
METHOD.

The method of the teacher should always be to lead the pupils to discover and to express for themselves all that they can about the form to be studied. Thus they will become both receptive and expressive. Therefore do not tell the children what they can find out; direct their observation, their thoughts, and their expressions, however, by skilful questions and exercises; remember also that drawing, as well as language, is a means of expression. In the following exercises suggestions are given for developing the work with the class; in order to carry them out well each child should have a model, so that each one can study and discover by touch as well as by sight. Do not give a question that will lead a child to repeat what you have said, but give questions that will lead to thought on the part of the child. Be careful always to obtain a complete sentence as an answer to any question.

FIRST GROUP OF SOLIDS.

The sphere, cube, and cylinder are taken as a triad and should be taught in their relation to each other. They are the first three gifts of Frœbel, and they are the fundamental forms of nature, manufacture, and art. The sphere and cube should be first studied in their relation to each other, and afterwards the cylinder should be studied in its relation to both.





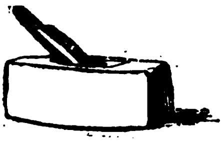
The Sphere.—The sphere is chosen as the first model for study, because it is the simplest and the best known of all type forms. It is smooth and pleasant to hold and handle, and always feels the same however you may turn it in your hand. Its outline always appears the same, for however you may turn or place the sphere, the outline is always a circle.

There are many objects like the sphere in general form that are pleasantly familiar to all the children. Many fruits — the apple, the orange, the currant, the gooseberry, the peach, the cherry, the grape — as well as the playthings most preferred by children as well as by those of larger growth — marbles, croquet balls, balls for bowling, foot-balls, tennis balls, base-balls — are spheric or spheroidal.

The Cube. — The second model taken is the cube, because it is the most simple type form next to the sphere. It is also the type which in form is the most like and the most unlike the sphere, with which it should be compared. All knowledge is based upon comparison.

The cube is like the sphere in that it measures alike from top to bottom, from left to right, and from back to front. But the cube also differs from the sphere. The sphere is round, and is, therefore, pleasant to hold; the cube has edges and corners, and therefore, when grasped, will cut and prick the hand.

The outside or **surface** of the sphere is unbroken by an edge; the surface, therefore, has but one part. The surface of the cube is broken by edges, and thus divided into six parts. A part of a surface unbroken by an edge is called a face. The sphere then has one face. It is called a *round* or spheric face.



The surface of the cube is divided into six faces, — the *front* face the *back* face, the *left* face, the *right* face, the *top* face, the *bottom* face. These faces are all perfectly flat, such as would be made by a carpenter's plane. Such faces are called *plane* faces. The shape of the outline of the sphere is like the outline of a circle; the shape of each face of the cube is square.

We speak of the *form* of an object as including three dimensions, of *shape* as including but two dimensions. It is necessary that the teacher be very careful in the use of these two words, as they are very frequently used incorrectly. A clear and correct use of terms by the teacher begets the same use by the children.

In whatever position the sphere is held, but one half of it can be seen. How much of the cube can be seen depends upon its position in relation to the eye. It can be held so that one, two, or three faces may be seen. If held at arm's length, directly opposite the eyes with a face toward you, but one face is visible. Raise or lower the cube a little, and two faces are visible. If the cube is held opposite the eyes with an edge towards you, two faces are visible; if raised or lowered while in this position, three faces are visible. When the cube is held so that the front face can be seen squarely, the cube is said to be facing; otherwise it is said to be turned.

The visible portion of the sphere always appears, in outline, round like a circle. The visible faces of the cube do not always appear square; when more than one face is visible, they appear somewhat modified in shape. When one face only is visible, that face appears square.

The sphere seems the symbol of motion; the cube, on the contrary, represents rest, as it stands so firmly, and does not, like the sphere, move at a very light touch. The faces are all alike, and it can stand on any face. Therefore cubes can be placed side by side, or built up so as to match and form a regular structure. Hence we find this form among the building-blocks of children.

The Cylinder.—The cylinder is taken next, because it is also a simple and a very familiar form. It is somewhat like the sphere and somewhat like the cube. It is called by Frœbel the "mediation" between the sphere and the cube. The sphere will stand and will roll. The cube will stand and will slide. The cylinder will roll and will stand and will slide. Its surface has three parts or faces; two of the faces are plane faces. The other face is curved, as it is round one way and straight one way.

The nature of both the sphere and the cube requires that they shall measure equally from back to front, from left to right, from top to bottom. The cylinder, however, is not so restricted. Its height or length may be of any proportion to its width. Thus a wire, an unsharpened lead-pencil, a rolling-pin, a street-roller, a collar-box, a coin, are all cylinders, although of such different proportions. They all have three faces,—two plane, one curved.

In nature, the trunks of trees, the limbs between the offshoot of one branch and that of another, the branches between the twigs, the twigs between the nodes, are somewhat like a cylinder. A node is the point on a stem where a leaf starts. The cylinder is a favorite form in many ways. Handles are many times cylindric, as a cylinder can be so comfortably grasped and held; from the handle of a baby's rattle to the handle of a crowbar, the cylinder occurs. Pen-holders and pencils resemble cylinders. A hollow cylinder is also a favorite form for many receptacles. Music-rolls, travelling-rolls, needle-books, etc., are found in the form of a cylinder. Cans of various sorts are cylindric. Napkin-rings, umbrella-stands, pails, cups, etc., resemble a cylinder. Boilers, gasometers, cisterns, resemble a cylinder. The form of all binding material is generally of the form of a cylinder, as wire, string, cord, rope. Conduits are generally of the form of a cylinder, as water, gas, and steam pipes.

Corners. — The cube has been considered above as a whole, and as to its surface, faces, and edges. A little thought should now be given to its corners. There are three kinds of corners, — **solid** corners, formed by the meeting of three or more faces (a solid corner formed by the meeting of three faces is called a **triface** corner); **biface** corners, formed by the meeting of two faces; and **face** corners, formed by the meeting of two edges. All of these are found in the cube. The triface and the biface corners may be also either outside or inside corners. The cube has only outside corners; a room or a box has inside corners.

SECOND GROUP OF SOLIDS.

The hemisphere, square prism, and right-angled triangular prism form the second group. These solids are the result of the division of the solids of the first group and may be associated with each other, and also with the type forms of the first triad. This group, like those which follow, present selections of leading types, including a rounding or curved form, as well as forms having plane faces. Thus in each group curved outlines are contrasted with straight outlines.

It has been thought better to make for these groups, sequential selections of leading type forms than to follow at this time a more detailed sequence which would introduce forms of minor importance. When in the course of educational development the full import of the study of form is realized, there will be sufficient time given in school courses to allow of a more detailed sequence.

The Hemisphere. — The hemisphere is taken next. It is readily developed from the sphere by bisection. A hemisphere is half of a sphere. It should be studied by comparing it with the sphere and cube. The sphere has one face, the hemisphere has two faces. The hemisphere will stand on either face, will slide on one face, will rock on one face, but it will not roll. One face is similar to the face of the sphere; but because it is not completely round, it is called *rounding*, not round. The other face of the hemisphere is, like the faces of the cube, plane. The shape of the plane face of the hemisphere is a circle.

The sphere has no edges; the cube has twelve edges. The hemisphere has one edge. The edges of the cube are straight; the edge of the hemisphere is *curved*.

The form of the hemisphere is naturally more often seen in divided objects than elsewhere, — half fruits of various kinds; but it is also met in many manufactured objects; dishes, bowls, kettles, ladles, are frequently like a hemisphere in general outline; also buttons, caps, lamp-shades. It is important that the children should be led to find the form studied in objects around them, because, on the one hand, the resemblance serves to interest them in the type form itself, and to fix it in their minds; and, on the other hand, it tends to give them a real and vital knowledge of form, as a part of all their surroundings.

The Square Prism. — The square prism is a solid having six plane faces, two of them being equal square faces parallel to each other; its four other faces being equal, and its opposite faces parallel. It is called a square prism, from its two equal square faces or bases. When the term square prism is used, it is generally taken to mean a solid which is higher than wide; but a cube (in which the height equals the width) is also a square prism; and a square plinth (in which the height is less than the width) is a square prism. All these have two equal square faces parallel to each other, and four other equal faces, the opposite faces being parallel.

The square prism is a very regular model. Like the cylinder, it has always two of its dimensions equal, and the third variable. Place the cylinder and the square prism upright. You will see that the cylinder measures the same from back to front as from left to right. It is the same with the square prism.

But while the two models agree in having two of their dimensions equal and the third variable, they differ in the number and shape of faces, or of parts of faces visible. The cylinder has three faces, — two plane and one curved; the square prism has six faces, — two square and four oblong.

The stems of some plants are somewhat like square prisms, but the form of a square prism is not common in nature. Boxes and trunks generally resemble a square prism, as its form is so well adapted to packing. The square prism is the form often chosen for horizontal and vertical supports, as the long plane face affords so good a resting-place for other timbers. Cars, omnibuses, and other vehicles, frequently have the form of a square prism.

Right-Angled Triangular Prism. — If the vertical square prism is bisected vertically through the diagonal of its top face, two new prisms result, having right-angled triangular bases (see page 00, Fig. 0); they are therefore called right-angled triangular prisms. This name is long, and it may be abbreviated to right-angled tri. prism, but it will not do to call it a right tri. prism. A right prism is any prism that has its axis perpendicular to its bases, Fig. 1; it is called a right prism, to distinguish it from a prism having its axis oblique to its bases, Fig. 2. The name right tri. prism means, therefore, simply a triangular

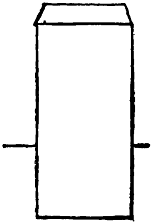


Fig. 1.

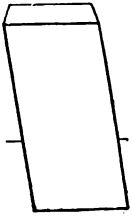


Fig. 2.

prism whose axis is perpendicular to its bases, and it does not imply that its bases are right-angled triangles. The prisms studied in these early exercises are all right prisms. An application of the right-angled triangular prism is frequently observed in roofs.

Angles. — An angle is the difference in direction of two or more faces, edges, or lines; it is therefore used as the measure of a corner. The angle made by the edges of a square corner is called a **right angle**; the angle made by the edges of a sharp corner is called an **acute** angle; and the angle made by the blunt edges of a blunt corner is called an **obtuse** angle. In the corners of the square, folded first, corner to corner and opened, as in Fig. 1, then folded edge to edge and a corner folded back, as in Fig. 2, you find two right angles, one acute angle, and one obtuse angle. In every corner there is an angle, but there may be angles without corners. A corner is made by the *meeting* of two or more edges or lines. As an angle means simply the difference in direction of faces, edges, or lines, an angle is made, whether the edges, or lines, meet or do not meet.

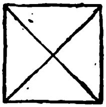


Fig. 1.

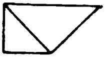
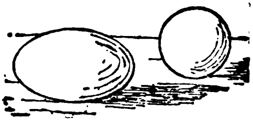


Fig. 2.

THIRD GROUP OF SOLIDS.

The ellipsoid, ovoid, and equilateral triangular prism make the third group of solids, and are taken together because of their common refinement of form. The equilateral triangular prism makes a pleasing contrast to the rounding form of the ellipsoid and ovoid. It will be helpful at this point to refer to what is said concerning the selection of the solids under the heading "Second Group of Solids," on page 10.

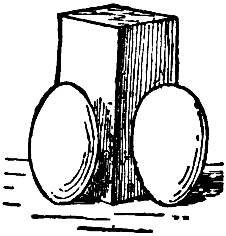
The Ellipsoid. — This is a model somewhat like the sphere, and it should be studied by contrast with the sphere. They are both pleasant to hold. The surface of each is unbroken by an edge, therefore each solid has but one face. The sphere, however, measures alike from top to bottom, from left to right, and from back to front; the ellipsoid held vertically measures the same from left to right and from back to front, but its height is greater than its width.



The sphere is beautiful in its perfect roundness, but in the ellipsoid we find another element, that of proportion. It is longer than it is wide, consequently its surface differs from that of a sphere. The surface of a sphere is round; that of an ellipsoid is called rounding. Try to roll the ellipsoid; you will find that while it will roll easily back and forth, if placed horizontally, if you wish to change its course you must turn it a little. If you place it in a vertical position on the table, and give it a little impetus, it will roll spasmodically.

We find that many things which are pleasant to eat and pleasant to see have this form, — fruits, as lemons, plums, barberries, gooseberries, Malaga grapes, etc.; the garden seed-holders, as cucumbers, watermelons, muskmelons, etc.; nuts, as pecan nuts, English walnuts, butternuts, etc. The cocoons of insects have this form.

The Ovoid. — This form must be studied in contrast with the ellipsoid. The sphere is pleasant to hold in the hand, but pleasanter still to roll in any direction; the ellipsoid can be grasped with pleasure by the hand, and it rolls back and forth, but a little unsteadily; but the ovoid nestles with comfort in the hand, as if recognizing its home, and in rolling, it describes a circle, as if completing the circuit of life.



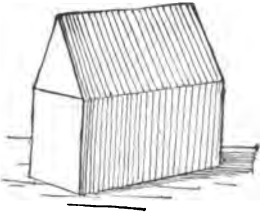
The surface of the ovoid is unbroken by an edge; therefore, like the sphere and the ellipsoid, it has but one face, only part of which can be seen at one time. These three models differ, however, as to their axes;

the sphere has any number of axes, the ellipsoid (vertical) has one vertical axis and any number of horizontal axes; the ovoid has but one axis.

But the element of proportion seen in the ellipsoid assumes a higher character in the ovoid. Hold the ellipsoid in a vertical position, the proportion lies between the height and the width. In the ovoid, the proportion lies not only between the height and the width but also between the parts above and below the greatest width. The ovoid, when in its normal position, has its axis vertical, and its greatest width nearer the upper than the lower end of the axis. The upper part of the ovoid resembles a sphere and the lower part resembles the ellipsoid.

The ovoid is found in a great number of natural forms, — in buds of flowers, in hops; in fruit, as plums, pears, strawberries, figs, pineapples (and these you notice are of most delicious flavor); in vege ables, as the egg-plant; in nuts, as acorns, hazelnuts, etc.; in seed-vessels, as the poppy, the rose-hip, etc.; in the bodies of animals; in the bodies of birds as well as in their eggs; in the bodies of insects; in the human head. In manufactured objects, there are jars and vases of infinite variety based on the ovoid.

Equilateral Triangular Prism. — There are also other triangular prisms, named according to their bases. The equilateral triangular prism (equi. tri. prism) is named from its bases, which are equilateral triangles. It has five faces,—two triangular and three oblong faces. It is here illustrated, placed on the square prism, with which it should be compared.

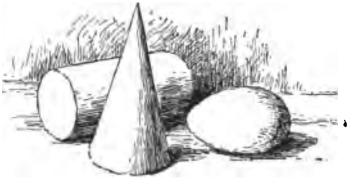


The form of the equilateral triangular prism, as well as of the isosceles and right-angled triangular prisms, is found among prisms used for the decomposition of light. It is also found in shelters of various kinds.

FOURTH GROUP OF SOLIDS.

The cone, square pyramid, and vase form the fourth group and should be closely associated with each other in the development lessons. The vase is the most complex of all the twelve forms and can therefore be associated with the largest number of type solids — embodying as it does some characteristics of each of the models, having round, rounding or curved faces. In considering this group of solids, it will be helpful to read what is said on page 10, under the heading "Second Group of Solids," concerning the selection of the groups of models.

The Cone. — The cone resembles the cylinder in diameter and in altitude, and the top and bottom views of both solids (when vertical) are circular in outline. The cone resembles the ovoid in mass and in action. The top and bottom views of these solids are alike in outline.



The cone is frequently found in nature, — in volcanoes, in mountain peaks; in fruits, as the pine apple, many seed-vessels, etc.; in leaf and flower buds. Animals and uncivilized peoples build in the form of the cone. Some birds build conical nests. The early lake dwellers made conical roofs to their curious houses, and men of to-day combine the cylinder and the cone in buildings and in towers. Many shells — the shelter provided by nature for some of her humblest children — resemble the cone.

The "horn," so often mentioned in the Bible; the "horn of plenty," or cornucopia, and the bon-bon receptacle of to-day, all resemble the cone.

Square Pyramid.—The square pyramid resembles the square prism in altitude, in diameter and shape of base, and in action. The shape of the top and bottom views of both solids, when vertical, is square. In mass, the square pyramid resembles the ovoid and the cone.

This solid appears in nature in crystals, and occasionally in flower buds, in the bud of the fringed gentian for example. Civilized and partly civilized man has utilized this form in tombs, in towers, and in the roofs of houses and cupolas. The Great Pyramids of Egypt are the most remarkable examples of this kind of architecture that can be found.

Vase.—The vase is related to a larger number of the type forms than any of the other solids. A resemblance to some part of this beautiful, complex form can be found in the sphere, hemisphere, cylinder, ellipsoid, ovoid, and cone. The top and bottom views of all these solids (when vertical) are circular in shape. In mass, the vase resembles the ovoid, cone, and square pyramid, and, in action, the ovoid and cone.

The vase form is found in nature in flower cups, seed-vessels, and fruits. The pendent nests of some birds resemble the vase form to quite an extent. From remotest times the vase has been fashioned in earth and in metal, and it has been put to a great variety of uses. The fantastic forms of the last century, as well as the vagaries of the present time, do not typify this form so well, even to the appreciation of children, as the pure form of the Greeks.

Plane Figures. — The plane figures derived from the study of these solids are the circle, square, oblong, semicircle, right-angled triangle, equilateral triangle, ellipse, and oval. The shapes of these figures are found frequently in the faces of objects.

In the study of these figures as to shape and proportion, many details, such as diameter, diagonal, axis of symmetry, altitude, are discovered. During this study, other figures, as different kinds of triangles, also the rhombus, rhomboid, trapezium, trapezoid, pentagon, hexagon, may be brought out.

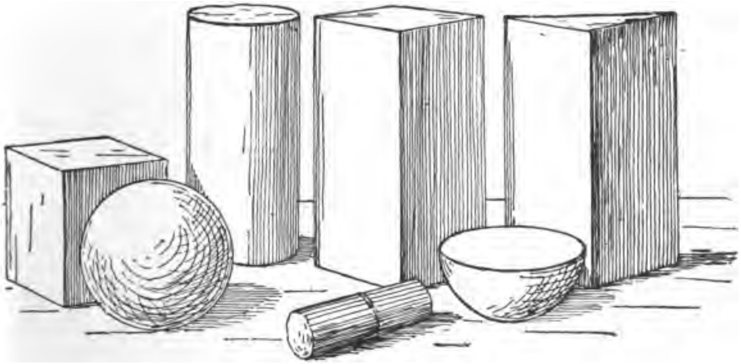
Grouping. — Good grouping depends upon the relations the objects bear to each other in form, size, and proportion, and also upon the relative position of the objects. A group in which all the objects present curves or in which the objects are expressed by straight lines alone is monotonous. The same would be true if objects were of such form or were so arranged as to produce a vertical or a horizontal effect, or an effect of parallel lines.

A group in which only very large and very small objects are found is not pleasing; neither would the arrangement be improved if all the objects were nearly of the same size. There should be, therefore, enough contrast of form and size, and enough variety of arrangement to strike the eye agreeably but not too forcibly.

SECOND PRIMARY YEAR.

FIRST QUARTER.

THE OBSERVATION AND RECOGNITION OR THE REVIEW OF NATURE-FORMS AND COMMON OBJECTS RELATED TO THE SPHERE, CUBE, CYLINDER, HEMISPHERE, SQUARE PRISM, AND RIGHT-ANGLED TRIANGULAR PRISM, LEADING TO A SELECTION AND TO THE GENERAL STUDY OF THESE TYPE SOLIDS.



The first quarter of the second year is to be devoted to the review of the six forms already observed by the children and to the observation of the ellipsoid, ovoid and equilateral triangular prism. The study of these forms will involve a considerable amount of comparison and more systematic observation than in the first year, thus leading to a more intimate knowledge of the solids, and to a closer sense of fellowship with these type forms. It is only when these solids become companions to the children that they can be truly known. It is the every-day relation with boys, and men, and houses, and horses, and carts, and boats that makes children so ready to draw them.

The solids are studied as in the first year by handling, modeling, and drawing. The drawing in this quarter is a representation of the solids and of objects resembling them as wholes, thus taking these things in the aspect most familiar to the children.

CHAPTER I.

FIRST WEEK.—FORM.

SPHERE, CUBE AND OBJECTS.

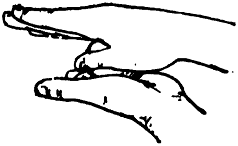
OBSERVING FORM. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **How do they feel? What do they do?**

Sphere, cube (children's size) on each desk. Same models, (teachers' size) on teacher's desk.

The children of this grade will, in most cases, have studied these type forms before. The object in studying them again is to review and fix the points taken up in the work of the previous year, and to make a more extended study of the solids. Suggestions are given with each lesson which will be found helpful in case a large number of the children have not previously observed the forms presented. Read, also, pp. 5–9.

In beginning with a new class, give the children first something to *do*, — then lead them to talk. They are less embarrassed in doing than in talking. Hold a sphere in one hand and a cube in the other, and give the children exercises in handling, and grasping, and rolling the two models between the hands, in order to *fix* the perceptions of form received through the palm of the hand by the muscular sense.



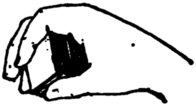
Let the children hold the sphere on the centre of the top of the desk, and tell what it would do if they should let it go. Let them tell what it would do if placed in the groove of the desk. Let them try it.

Having given repeated impressions of the roundness of the solid, ask for the name — ***sphere.*** If the children do not know the name it may be given. As this is a little difficult to pronounce, spend a little time in getting a good enunciation of the word. Give simple exercises in taking the sphere in the right and left hands, and in putting it in the groove of the desk, and follow each exercise with the question, "Where is the ***sphere?***" obtaining in answer full sentences containing the word *sphere.*

Let them tell all that the sphere will do. ***The sphere will roll. The sphere will stand.***

Write the word *sphere* on the board and let the children read it. This presents the word to both ear and eye. Do not have the word spelled — unless by giving the sounds.

Ask them to find things in the room that are something *like* a sphere, to think of things something like a sphere, to bring toys or other objects to-morrow something like a sphere. Ask if any can bring spheres to school, such as marbles, etc., that the teacher can keep to use in other exercises. In this way the supply of spheres can be very easily increased.



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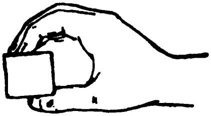


Fig. 2.

Grasp the cube in the hand so as to feel the corners and tell the children to do as you do; hold it between the hands by the edges, and tell the children to do as you do; tell them to show you the best way to hold the ***solid*** in two hands. Hold the cube in the right hand, as illustrated in Fig. 2, and tell them to hold it as you do, and then to strike as you do, gently, in the palm of the left hand; one, two, three. Repeat with the left hand; one, two, three.

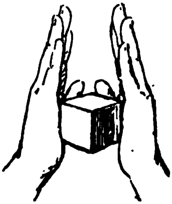


Fig. 3.

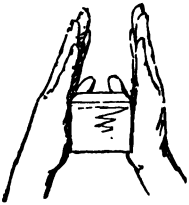


Fig. 4.

Ask for the name of the *solid* — ***cube.*** If the children do not remember it, give the name. Give exercises to bring out the action of the cube, and use the name, *cube*, as much as possible. Let the children compare its action with that of the sphere by placing the hand upon the sphere, palm down, and moving the sphere gently; the same with the cube. Ask them to roll the sphere in the groove of the desk; to roll the cube. Let them tell all that the cube will do. ***The cube will stand. The cube will slide.***

Write the word *cube* on the board and let the children pronounce it.

Lesson 2. **Let us make a sphere of clay. Have you ever made a cube? Who knows a good way to make a sphere or a cube?**

Sphere or cube and an object resembling the solid.

Enough clay to make the solid and the object resembling it of good size, and to leave a small piece for filling seams, etc., on each desk.

The clay should be rather moist, especially when there is artificial heat in the school-room, as it dries very quickly in the children's hands. The juice of the clay is its life. Clay that is too dry will not show the imprint of the hand when finished.

It is the susceptibility of clay to receive impressions that makes it valuable as an educational and an art medium. If the clay is handled rightly, this responsiveness is seen even when the modeling is finished.

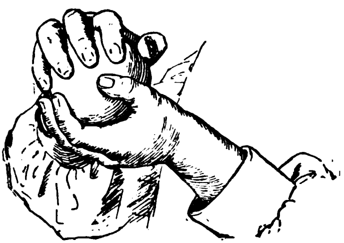


Fig. 1.

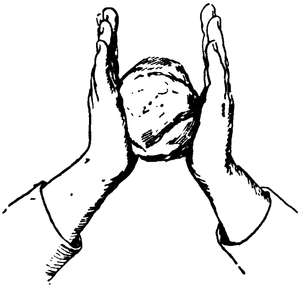


Fig. 2.

Let the children of alternate rows model spheres and objects resembling the cubes, the remaining children model cubes and objects resembling the spheres. Let the children grasp the solid to get the impression of the form which they are to model (for example, Fig. 1 —grasping the sphere); then let them quickly mass the clay into the general form of the object, whatever it may be (for example, Fig. 2 — massing the cube).

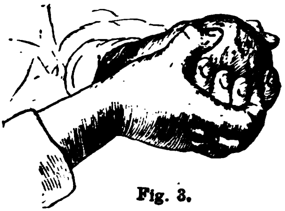


Fig. 3.

After the children have the general form massed, let them draw the clay together with the thumbs and model it into correct form, Fig. 3. If necessary, let them fill up cracks from the extra piece of clay on the desk, or add to the mass to bring out the form more distinctly. The cube should be modeled with the thumbs — not by beating on the desk.

It is not intended that a wooden sphere or cube shall be imitated in clay, but that the form, size, and proportion shall be translated into clay. Edges modeled in clay must not be sharp and thin like wooden edges, but blunt, thick, and rather soft in finish. In this grade they should be made not only by pressure; they should be modeled with the thumbs.

Remember that modeling in clay is not for the sake of the result, for the sake of making something pretty and interesting, but for the sake of what it does for the child in the way of developing sensitiveness of touch, power in the hand, concentration of observation, and expression of thought and feeling.

After the spheres and cubes are modeled, let the children model objects resembling them. Try to lead the children to the expression of as much feeling as possible — that is, the expression of delight in and love for the object modeled, as well as to a comprehension of the form.

In collecting the modeled type-forms and objects, it is well to place those sufficiently good to be kept upon something soft — cotton makes a good "bed" — to prevent the flattening of the sphere and spheric objects.

Lesson 3. **How much can you see of the sphere? Let us draw its outline.** *

Sphere, pencil (with the point toward the left), and paper on each desk.

Bring out the part of the sphere toward you, the part away from you, by holding out the sphere and showing how much can be seen, and by tracing the ***outline*** of the sphere. Let the children do the same; then let them trace the *outline* of the sphere with large, free movement, first in the air (Fig. 1), then on the desk (Fig. 2). Secure full arm movement and erect positions whether the children are standing or sitting. Through all the succeeding lessons, pay *especial* attention to exercises in free movement of arms and fingers, to promote flexibility and secure ease in using the pencil.

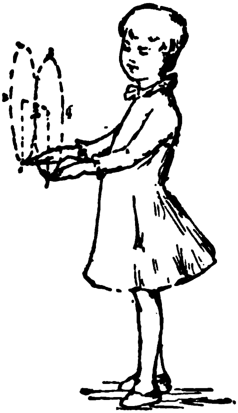


Fig. 1.

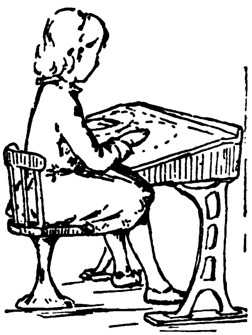
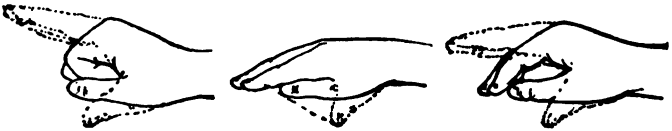
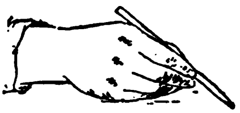


Fig. 2.

As a preliminary to pencil holding, give the exercises indicated in the illustrations above, without the pencil. Then ask the children to take the pencil in the left hand near the point, as you do, and place it in the right hand, which should hold it easily, as yours does, about three inches from the point. Let the children see if they can turn the pencil easily, as it lies between their thumb and two fingers. It is well to have the pupils lay down and take up their pencils together





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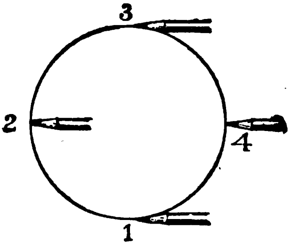
* This lesson is based upon the supposition that the children have made a number of observations of the sphere previously.

two or three times, so that the manner of doing it may be understood. By these exercises the pencil will be quickly placed in the hand, and long, light pencil holding secured.



Let the children try the movement for a circle about three inches in diameter, on the desk, with proper pencil holding, but without touching the surface of the desk with the pencil.

Repeat the movement over the paper, then draw a large circle, drawing with the side, not with the point of the pencil. Let the children draw round and round several times, securing good movement (Fig. 1). Later the circle will be drawn with one sweep with a broad gray line* (Fig. 2). All drawing should be done with a full arm movement.

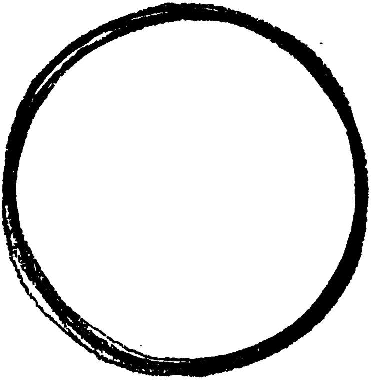


Fig. 1.

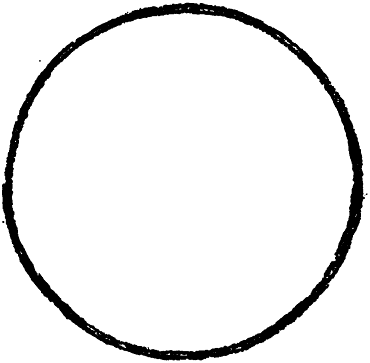


Fig. 2.

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* Pencils should be sharpened to a blunt point in order to secure a broad, gray line. The lead should not be cut at all—but worn by drawing successive lines with it so as to flatten places which will make broad lines. The pencils should be kept by the teacher, and if proper care is taken of them, they will need sharpening but a few times during the school year.

Lesson 4. **How can you place them to look well? Let us make a pleasing row.**

If possible, five spheres or cubes on each desk.

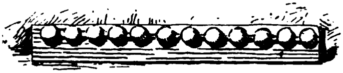
"Out of the determination to 'make the best of it' has grown much of the most beautiful pattern-work. . . .

The very repetition of parts, then, produces pattern; so much so, that one may say wherever there is ordered repetition there is pattern."—*Lewis F. Day.*

With the simple material given, lead the children to make the "ordered repetition" suggested above. Ask them to think of rows of boys or of girls. Let some of them stand in a row, children of about the same height. Recall to them the flower gardens they have doubtless made in their play on in earnest,— the beds bordered with a neat row of flowers or with shells or pebbles.

Let the children arrange their spheres or cubes in pleasing rows. Lead them to think what the row of spheres or of cubes resembles and to tell about it. Let them think what could be made from these rows.

Recall the string of spheres modeled in the preceding year and called a "string of beads." Show the children bits of pearl beading and lead them to think how the string of beads could be applied to a molding. The illustration given below is an ornamentel astragal from a Greek column.



Lesson 5. **Options.** *See Note 1.*

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 148.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.*** *See Note 2.*

Note 1.—It is felt that the last day of the week should offer the teacher an opportunity to show an individual interpretation of the work in form study and drawing. For this purpose three lines of work have been suggested above, either of which may be followed at the teacher's option.

Suggestive courses of study in the first two lines of work may be found in Appendices I. and II. The outlines of work for expression in nature study, and for other illustrative drawing, are merely suggestive, and the accompanying typical lessons, written for children in the first primary year, are intended to convey the spirit of the work rather than to serve as models It is hoped these suggestions may lead teachers to an appreciation of the value of drawing as a practical aid in the teaching of other subjects, and thus promote its integration with all lines of school work. A review is suggested each week in the text, for any who prefer this line of work.

Note 2. — Review, as applied to school work, does not always imply simply a journey over old roads to a desired point. To repeat the same questions concerning the roundness or action of the sphere, for instance, is not only monotonous but narrowing to the child's mind.

In the review of Lesson 3, for example, the following method might be pursued:—

Handle and grasp the model; how does it feel? What is it called?

How much of the sphere can you see without turning it? Show with the fingers, and tell what part can be seen, and what part cannot be seen. (*The part of sphere toward you can be seen, the part away from you cannot be seen.*)

Trace with the fingers on the sphere the outline of the part that can be seen; trace the outline in the air. All trace the outline in the air; what is the shape of the outline? (*The shape of the outline of the sphere is round; it is like the outline of a circle.*)

Let the children cut the shape of the outline of the sphere from paper. Let them imbed the spheres in dry moulding sand (if possible) so that only the part seen will be out of the sand.

CHAPTER II.

SECOND WEEK.—FORM.

SPHERE, CUBE, CYLINDER AND OBJECTS.

OBSERVING FORM. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **How much do you remember about the sphere? The cube? The cylinder? What can we find that is new?**

Sphere, cube, cylinder on each desk.

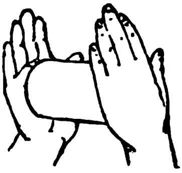


Fig. 1.

Combine the exercises in grasping, holding and rolling, given for the sphere and cube, and apply them to the new solid. Compare the new solid with the sphere and cube by grasping and holding. Ask the children to give the name of the solid,—***cylinder.*** If they do not remember the name, it should be given to them. Write *cylinder* on the board and let the children pronounce it.

Taking the sphere between the thumb and fingers of the left hand, and turning it with the thumb and fingers of the right hand, ask the children to turn the sphere in the same way, round and round, and over and over, so that their fingers will touch the sphere all over. Ask what they are doing and what part of the sphere they are touching.

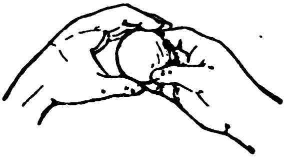


Fig. 2.

Repeat with the cube and cylinder. Ask them to touch the inside of the cube. Ask what part they *can* touch. Ask them what the outside of a solid is called. If they do not know, tell them that the outside of a solid or object is called the ***surface.*** Give practice in touching the surface of objects, and in telling what they have touched.

Give exercises in finding the different parts of the surface of the cube and cylinder by moving the fingers along the surface until its direction is suddenly changed.

Taking the cube and touching the top, ask, What part am I touching now ? Let the children touch the tops of their cubes and move their fingers all over the tops. Ask them what this part of the surface of a cube is called. If they do not remember, tell them the top is a part of the surface of the cube, and is called a ***face.*** Ask them to find another — another — another. Ask them how many faces the sphere has — (one) ; the cube — (six) ; the cylinder — (three).

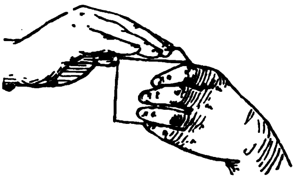


Fig. 3.

Lead the children to compare the face of the sphere with the surface of the top of the desk by holding the sphere, and by moving the hand along the desk. Ask them to tell how each feels — (round, flat). Ask them what a face that feels round every way is called ; what a face that feels flat is called. If they do not know, tell them that a face that feels round every way is a ***round face,*** and that a face that feels flat is called a ***plane face.*** Give exercises in finding and telling about round and plane faces.

Ask the children to grasp the cylinder. Give exercises in position,— in placing the cylinder on the centre of the top of the desk, ***standing,*** then ***lying*** down, and so that it will roll to the front. Ask the children to place the cylinder lying down, and so that it will not roll to the front; then to roll it to the front without turning it ; and to tell about it.

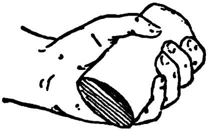


Fig. 4.

Take up the cylinder as in Fig. 5 ; then ask the children to hold their cylinders in the same way and show you the face on which the cylinder rolls. Tell them to move their fingers around that face from front to back, and then along that face from left to right. Ask them how their fingers move. Ask them to try to move their fingers in the same way on the sphere. Tell them that any face that is curved one way and straight one way is called a ***curved face.*** Give exercises in finding and telling about round faces, plane faces, and *curved* and plane faces.

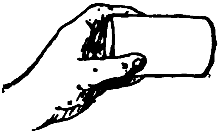


Fig. 5.

Write *surface*, *face*, *round face*, *plane face*, *curved face* on the board, and let the pupils show, by handling the solids, what the terms mean at the time they pronounce the words.

Lesson 2. **Can you model the surface well? Show me plane and curved faces in the cylinder.**

Sphere, cube, or cylinder, an object resembling the solid, and clay on each desk.

In distributing the solids, see that the children who modeled spheres the preceding week have either cubes or cylinders and that those who modeled cubes have either spheres or cylinders. Keep the spirit of the work as shown in Chapter I, Lesson 2, page 22, and lead the children to simple, earnest expression of form.

Let the children model the cylinder by massing the clay with the palms and thumbs, and by drawing it together with the thumbs to make a good surface. If there are depressions at the ends of the cylinder, let the children fill them up with clay from the extra piece on the desk, packing the clay in firmly with the thumbs.

When the solids are modeled, let the children model the objects resembling the solids.

In all modeling seek for the general mass first, trying to get it with the first pressure of the clay. The cylinder is an oblong mass. Let the children get this first, then lead them to observe the width of the lump —half the measure of the length.

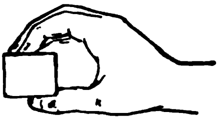
Let the children compare the clay with the cylinder, holding both at arm's length or placing them at the back of the desk, then work to improve the plane faces, the curved face. Let them build up any part, if necessary, from the extra clay on the desk.

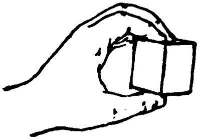
The teacher should always be on the alert to see when the modeling is well done and to remove it before the object is spoiled by too much modeling.

Lesson 3. **Can you hold the cube as I do? Show me how it looks.**

Cube, paper, and pencil on each desk.

Hold a cube out ***facing*** you, and ask the children to hold their cubes as you do. Ask them what part of the cube they see —(face), and then, how they hold the cube—(***facing***). With the finger of the left hand, turn the face of the cube half away and ask the children what you did. Ask them to do as you did and and to tell what they did. Give them practice in placing the cube in different locations on the desk, both *facing* and ***turned*** half away.





Ask the children to see how carefully they can imitate your way of holding the cube.* Show them how to hold the solid in each of the following positions, first with the cube facing, then turned: —

(1) Out in front of the eyes; (2) above the head; (3) close in front, touching the waist; (4) out in front, but below the level of the eyes; (5) out in front above the level of the eyes.

Let the children repeat the exercises in holding the cube and ask with each exercise how many faces are seen. Ask the children to show you how to hold the cube to see more than three faces.

After the cube has been observed in a given position, ask the children to show by a drawing how it looks — as, out in front of the eyes facing, Fig. 1, or turned, Fig. 3, — out in front but below the level of the eyes facing, Fig. 2, or turned, Fig. 4. Be careful not to influence the drawings.

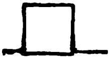


Fig. 1.

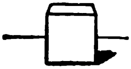


Fig. 2.

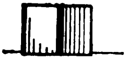


Fig. 3.

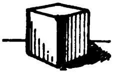


Fig. 4.

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* In giving these positions to be imitated by the children, it should be remembered that any object held opposite the eye by the teacher, when standing, is far above the eyes of the children. Care should be taken therefore that the children understand how the solid is to be held *with regard to themselves*. The impulse of the children is to hold the solids as high as the teacher's solid is held and they do not, therefore, get the desired view of the model.

Lesson 4. **Let us arrange the solids again. Can you arrange them alternately?**

Spheres and cubes or spheres and cylinders on each desk.

"And this is the great secret of excellence in decoration, in everything that pertains to art, that the artist workman should take delight in his work."—*Lucy Crane.*

Ask first a boy, then a girl to come out to stand so as to make a row. Ask them to stand in the order in which they were called — boys and girls ***alternately.***

Ask the children to arrange their solids in rows — the spheres and cubes or the spheres and cylinders placed *alternately.*

Lead the children to talk of what might be made from such an arrangement. Ask them to look for moldings that make them think of what they have made.

Lesson 5. ***Options.***

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 161.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER III.

THIRD WEEK.—FORM.

SPHERE, CUBE, CYLINDER, AND OBJECTS.

OBSERVING FORM. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **Can you tell me the shapes? Find the edges and corners.**

Sphere, cube, cylinder on each desk.

Ask the children what ***solids*** they have. Ask them about the face of the sphere,— what part of the face they can see, and to show you how far around the sphere they can see by moving their fingers around the sphere. Let them move their fingers in the air as they moved them upon the sphere, making the ***shape*** of the *outline* in the air. Ask them to give the name of the shape — ***circle.*** Let them find the tablet of this shape.* If they do not know the name, it must be given. Bring out ***round like a sphere, round like a circle.***

Let the children hold the cube and the cylinder together and look at their plane faces. Let them find the tablet of this shape.* Ask if any one knows the name of the shape of the face of the cube — ***square.*** If it is not known, it should be given. Ask if any one can tell the shape of the plane face of the cylinder.

Ask them to hold the cylinder upright, to show you the curved face, and to tell what part of the curved face they can see. Let them stand the cylinder on the desk and show with the fingers of the two hands just how far they can see the curved face on the two sides.

Let them hold the cylinder in the left hand, out in front and on a level with the eyes, and trace the shape with the first finger of the right hand. Let them begin at the bottom of the left side, move up to the top, straight ***across*** the plane face, down the right side, and across the bottom to the place where they started. Let them repeat this, and then make the same shape in the air. Let them find the tablet of this shape.* Ask for the name of the shape — ***oblong.*** If it is not known, it must be given.

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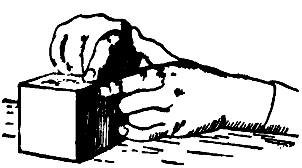
* **If the children have no tablets, they may cut the shape in paper.**

Give exercises in finding circles, squares, and oblongs in the solids, and in the objects about the room, asking the children to point them out and to tell about them. Write *circle*, *square*, *oblong* on the board, and let the children trace in the air the shapes named and then make large drawings of them — at least six inches in diameter — on the board. Encourage good positions when standing at the board, and full free-arm drawing. The children should stand at a sufficient distance from the board to enable them to draw with straight arms.



Let the children grasp the sphere, cube, and cylinder. Hold the cube between the hands by the edges, see page 21, Fig. 3, and ask the children to do the same. Let the children move the fingers on the faces of the cube and cylinder toward each other until they meet at an edge. Ask for the name — ***edge.*** If it is not known, it can be given. Practice in finding *edges*.

Let the children contrast the straight edges of the cube with the curved edges of the cylinder by moving their finger upon them. Lead them to think of the plane faces of the cube meeting at a ***straight edge,*** and the plane faces and the curved face of the cylinder meeting at a ***curved edge.*** If the children do not know the terms, give them. Give practice in finding *straight* and *curved edges* in the room and telling about them.

Let the children grasp the cube so as to feel the corners, see page 18, Fig. 1. Let them find the corners of a box which are ***outside*** corners; stand in the corner of a room, find the corners within a box, which are ***inside*** corners; place the finger in the corners of the square, of the oblong — place their cube in the corners of the slate or paper, which are ***face*** corners.

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* If the children have no tablets, they may cut or fold the shape in paper.

Write *straight edge*, *curved edge*, *inside corner*, *outside corner*, *face corner* on the board and let the children find the different edges and corners as their names are pronounced.

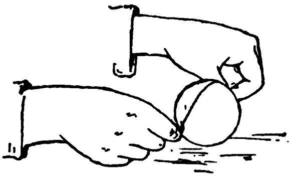
Lesson 2. **What shall we model to-day? Let us see how thoughtfully we can work.**

Object resembling a sphere, cube, or cylinder and clay on each desk.

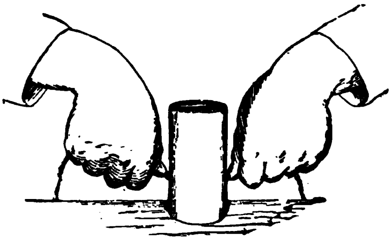
Let the children model the objects on the desks. In this work try to lead the children to see the principal characteristics of the object and to express them boldly and freely.

If preferred, the following lesson may be given. *A piece of strong string nine inches long should be on each desk.*

Let one child model a sphere, another a cube, and another a cylinder, so that the modeled solids may be well distributed through the room. Show the children how to ***bisect*** the sphere, and how to cut a ***tablet*** from one half. Let the children show this *tablet* and recall the shape — a circle. Show them how to cut a tablet from the cube, and ask what the shape of this tablet is.



Let the children *bisect* the cylinder and cut an oblong tablet from one half. Write ***circular tablet, square tablet,*** and ***oblong tablet*** on the board, and let the children show the tablets of these shapes, which they have cut from the clay, arranging them nicely.



Lesson 3. **How does the cylinder look? Draw a picture of it.**

Sphere, cylinder, paper, pencil on each desk.

This lesson with Lesson 3 in Chapters I. and II are the first in a series of lessons under the heading of "Seeing and Drawing." It is hoped they may lead to the free expression of what is observed by the children under the careful direction of the teacher. Since the teacher's manner of holding is to be imitated by the children, it is necessary that great care be taken by the teacher in showing the different positions. The arm should be straight, the cylinder erect, and the solid should be held *directly* in front, above the head, etc. The phrase *out in front* given without any specific direction with regard to the eyes, means directly opposite the eyes. An object held *out in front below the eyes* appears very differently from one that is held out in front opposite the eyes.

By use of the sphere, recall its face and what part is seen. *See Chapter* 3, *Lesson I.*

Show the children how to hold the cylinder ***upright,*** out in front of their eyes at a suitable distance, and ask them to observe it carefully so that they can make a picture showing how it looks. Let them make this picture on the paper without suggestions as to how or where it shall be drawn.

Repeat this exercise with the cylinder held from left to right; with the cylinder held from back to front; with the cylinder upright, right over the head; with the cylinder upright, close to the waist in front, — the children drawing the appearance each time.

Repeat the observation and drawing with the cylinder upright, out in front, higher than the eyes, — with the cylinder upright, out in front, and lower than the eyes. Let these drawings be rapid; do not stop to criticise. The desire is that this drawing shall be as unconscious and unconstrained as possible.

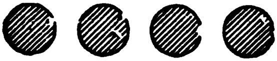
After the children have shown by drawings how the cylinder looks, repeat the exercises in holding, and ask how the plane faces lookin the different positions. Be careful not to influence the answers. In the endeavor to tell how the facas look, the children will gain in the power of seeing.

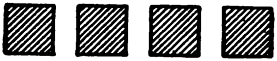
Lesson 4. **Let us arrange tablets in a pleasing row. Have you ever made a border?**

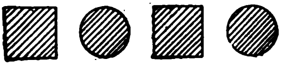
If possible, five each of circular, square, and oblong tablets on each desk.

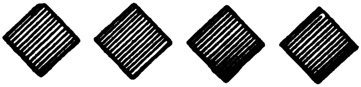
> "The more extensive, therefore, your acquaintance is with the works of those who have excelled, the more extensive will be your powers of invention, and what may appear still more like a paradox, the more original will be your conceptions."— *Sir Joshua Reynolds.*

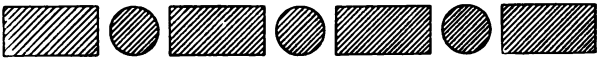
Let the children handle the material on the desks for a few moments and watch to see what they will do. In some children the sense of rhythm is very strong, and no doubt many of the class will make the "orderly successions" given below.











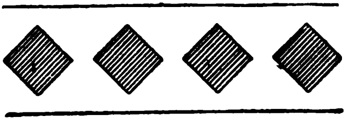
Should only a small number of the children arrange the tablets in rows, ask the class to make this arrangement. Show the best rows and ask the children what they think of them. Do not commend rows in which squares touch by corners or in which the corners of squares touch circles (in case the circles and squares are placed alternately). Lead the children to think about their arrangements and to tell what might be made from the "rows" The material is so different from that used in the preceding lessons in arrangement that it must suggest quite different uses to their minds from those suggested by the rows of solids,— and still the idea of decorative purpose must be uppermost.

Show the children simple borders in which the repeats are easily distinguished. Care should be taken that the examples shown are good in color and design — the simplest and most beautiful that can be obtained.

Let the children find borders around the room — on their clothing, on the wall. Ask them to notice what is used in making the borders and talk to them about the ***repeats,*** or *units repeated* and the ***marginal lines.*** If possible, give them strips of paper the color of the tablets and let them arrange borders, thinking, as they arrange, what they will use for *repeats* and how far from the repeats they will place the *marginal lines.*

Write *border*, *repeat*, and *marginal lines* on the board and ask the children to pronounce the words and to show what the terms mean.

A Border. — A border, however simple it may be, appeals to the sense of unity, for it limits and separates from other things the object on which it is used; thus it leads to the recognition of the object, as a whole, complete in itself. It appeals also to the sense of symmetry. For symmetry of a whole is produced by balance of its parts, and in a simple border, the upper and lower parts balance each other. Proportion in an object as a whole, is produced by the unequal relation of its parts. The contrast between the extent of a border and its width satisfies the early sense of proportion. The repetition in a border appeals by its regular succession to the sense of rhythm. For as in music, rhythm is produced by a regulated succession of sounds, so in ornament rhythm is produced by a regulated succession of forms or figures.



Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 171.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c*) ***Review of the week's work.***

CHAPTER IV.

FOURTH WEEK.—FORM.

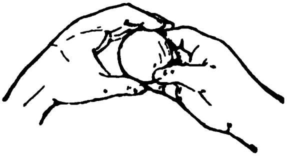
SPHERE, HEMISPHERE AND OBJECTS.

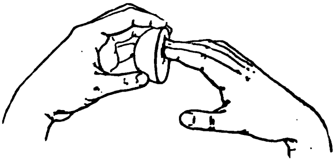
OBSERVING FORM. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **Why do they do so? In what ways are they different?**

Sphere, cylinder, hemisphere on each desk.

Lead the children by exercises in holding, grasping, and rolling, and in passing the fingers over the sphere and hemisphere to tell about the "half a sphere," its action, its surface, and its faces, ***rounding*** and plane. Ask for the name — ***hemisphere.*** If the name is not known, it should be given. Let them compare the cylinder and the hemisphere in a similar manner, to tell in what ways they are alike and how they differ, using their names freely.





Ask how many faces the sphere has, the hemisphere, the cylinder, — which has a round face, plane faces, a curved face, a *rounding* face.

Let them hold the hemisphere, with the plane face down, out in front of their eyes and tell what part of the rounding face they see. Let them show the shape of the rounding face by movement on the hemisphere and in the air. Ask them the name of the shape of this outline — a ***semi-circle.*** If they do not recall the name or have not learned it, give the name. Let them draw the outline of the rounding face (Fig. 2) on the board with freedom.

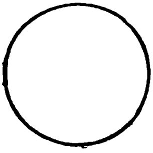


Fig. 1.

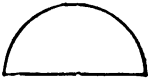


Fig. 2.

Write *hemisphere*, *rounding face*, and *semicircle* on the board and ask the children to pronounce the words and show what is indicated by them.

Lesson 2. **Let us make a hemisphere. Who will show us how?**

Sphere, hemisphere, object resembling the hemisphere, clay, strong string on each desk.

Let the children model and bisect a sphere to make a hemisphere. Ask them if they can think of any other way of making the solid — really making it, not cutting it off a sphere. Lead them to build a hemisphere, beginning with the plane face and building it up by using the thumbs as in making the tablet in the first year's work.

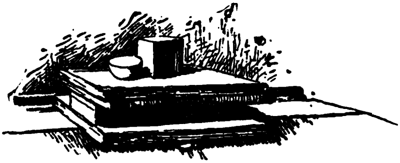
Do not let them build aimlessly; let them study the model hemisphere, compare its height with its width, and then study their own work.

When the hemisphere is modeled, let the children model an object resembling it, — a cap, a cup, etc.

Lesson 3. **Can you be very thoughtful to-day? Let us make a good picture.**

Cube, hemisphere, paper, pencil or charcoal on each desk.

Let the children place books and boxes on the back of the desk so as to make a pile about six inches high. Be sure the pile is level. Ask the children to place the cube and hemisphere on the pile so that they will seem like a picture, or so that they will look as though they belonged together.



This exercise is intended to lead the children to make pleasing groups of objects and to *picture* the group — mentally and on paper. The first thing to secure is good grouping. *See Introduction, page* 18.

Ask the children to bring pleasing objects resembling the hemisphere to be used later in making groups for the picture. Show them a pretty cup, or a Japanese tray that resembles a hemisphere, and ask them if they have anything like this which can be brought to school. Interest them in looking for things pleasing in color as well as in form. In every possible way the æsthetic sense of the children should be cultivated. It is for this purpose that so many really pictorial drawings of pleasing objects like the type forms are given in connection with the lessons.

Lead the children to observe carefully by asking them to look steadily at the objects for a moment, and then to shut their eyes and see if they can think just how the objects look, so that they could draw a picture of them. Let them draw the objects *as they look.*

When the objects are drawn, show the children a simple picture of similar objects which has a table line. Ask them what they think the line they see means. Ask them to show what would answer to this in their own groups. If the children understand the meaning of the table line, let them add it to their drawings, but do not force the work.

Lesson 4. **Can you make a border of hemispheres? Let us make a rosette.**

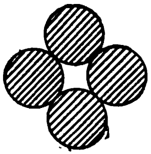
Five each of hemispheres, circle and squares on each desk.

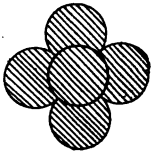
Beauty in Decorative Design. — There is in man an innate sense of beauty and a desire to express it. Being himself a conscious unit and thus having a sense of unity, he is pleased to make something which is a whole, which is complete. Thus in his work he naturally seeks to produce unity, which is the very foundation of beauty in decorative design. He has an inborn feeling for symmetry, for proportion, and for rhythm. He is himself symmetric and well-proportioned and rhythmic in his motions, and he enjoys the reproduction of these effects, so elemental in beauty, either by himself or others; for they mirror what is a part of himself. So the child is pleased if in his creative work he can produce these effects. It is easy for you, as a teacher, to build upon these natural susceptibilities, and thus to guide the pupils to a fuller and more complete sense of beauty in ornament and to develop their ability to produce it. But you must be content to let these be matters of growth. For a long time the work must be of the simplest character.

Let the children arrange the hemispheres in a row with the plane face down. The hemispheres may be touching, near together, or far apart.

Lead the children to associate this arrangement of the solids with some ornament they have seen, so that they may feel the purpose of the work.

Let the children work freely with the tablets, making arrangements around a centre. At least ten good arrangements can be made with the material the children have. If the children do not use the central figure, lead them to find a flower form in the arrangement of circles, and they will at once add what will mean to them the heart or centre of the flower. When they see how complete this makes the figure they will add a central figure to any arrangement whether of squares or of circles. This leads them directly, though unconsciously, to the appreciation and expression of *stability* in their arrangements.





> "In India, one of the methods among the natives of teaching design is to give children the petals of fresh flowers, which they may arrange in moist sand to make rosettes, and borders, and surface coverings. Thus these native children learn beauty of proportion, of curvature, and of color, from the tender beauty and grace of the flower."

Talk with the children about their arrangements that remind them of flowers — those have a name that tells us the figures resemble a flower — ***rosette,*** meaning a "little rose." Ask them to make other *rosettes*, using different ***repeats*** from those used at first — to use four *repeats* and a ***central figure*** of a shape different from that of the repeats.

Do not praise or commend weak or meaningless arrangements. Show the best arrangements made by the children and ask why they are pleasing. The children may not be able to tell, but the question will give them reason to think the lesson is of some moment — that there is more in it than the mere playing with tablets.

Write *rosette*, *repeat*, *central figure* on the board and ask the children to pronounce the words. Let them show what is meant by the terms.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 162.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of Lesson 1 or Lesson 4.***

CHAPTER V.

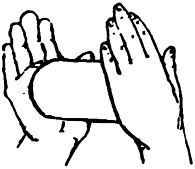
FIFTH WEEK.—FORM.

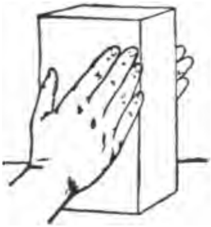
CYLINDER, SQUARE PRISM AND OBJECTS.

OBSERVING FORM. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **Let us compare them. What do you find?**

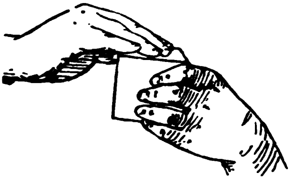
Cube, cylinder, square prism on each desk.

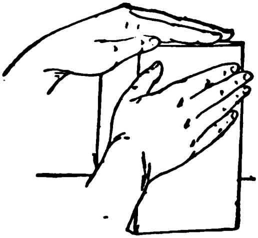




Lead the children by exercises in grasping, placing, and moving, and in passing the fingers over the cylinder and square prism, to tell about their action, surface, and faces (plane and curved), about the number and shape of the faces, and about the edges. Lead the children to make as full a comparison of the cylinder and square prism as possible.

Lead the children to compare the cube and the square prism,—the number and shapes of faces; the number, position, and direction of the edges. Let them compare the height of the two solids. Let the children produce a square prism by putting two cubes together.





Ask the children to give the name of this new solid—***square prism.*** If they do not recall it, tell them the name. Write the name *square prism* on the board and let the children pronounce it.

Ask the children to mention objects like a square prism. Tell them a short story, allowing them to mention an object like a square prism when it is necessary to complete the story. As for instance: Last summer I wished to visit a friend and stay some weeks; I found that my bag was not large enough to hold my dresses. I went to a store and bought a ——. Let some child complete the sentence by mentioning something like a square prism, and then in turn tell another story in the same way for some one else to complete.

Lesson 2. **Let us model again to-day. Can you make good edges and corners?**

Square prism and clay on each desk.

Let the children model a square prism by pressing the clay into general mass with the palms and by modeling the edges and corners with the thumbs and, if necessary, some use of the fingers.

When the square prism is modeled, let the children model an object resembling it. Endeavor to have the children work freely and boldly, and, above all, with pleasure and delight.

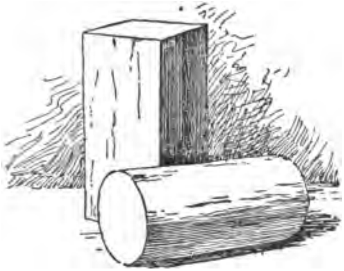
Lesson 3. **Can you see the picture with your eyes closed? Let us make a careful drawing.**

Cylinder, square prism, paper, pencil or charcoal on each desk.

Arrange the desks as in Chapter IV., Lesson 3. Let thechildren try to make as pleasing a group as they can with the cylinder and square prism. Ask them to look at the group and then to close the eyes and think how it looks and how they can draw a picture of it.

After they have drawn the solids, ask them to think of something like the cylinder and square prism (a rug rolled up and strapped, a trunk, an umbrella stand, etc.), — to think of them as placed together to make a picture. Let them draw the picture about which they are thinking. Do not suggest how, but show simple pictures of similar objects. Talk freely with the children about the pictures. Let them add a table line to their drawings, if they understand it. Do not force this point, or, in fact, any of the points.

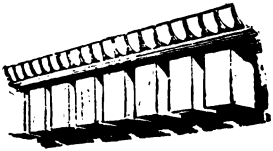
The aim in this pictorial work is to give opportunity for the freest, most unconscious expression — to have the picture show the mind and soul of the little artist, just as a great picture shows the mind and soul of the great artist.



Lesson 4. **Let us arrange solids again. What can we make with the tablets?**

If possible, five each of square prisms, circles, squares, or oblongs on each desk.

Let the children arrange the solids and tablets as they like upon the desk. Ask all who have square prisms to place them "standing" in rows.



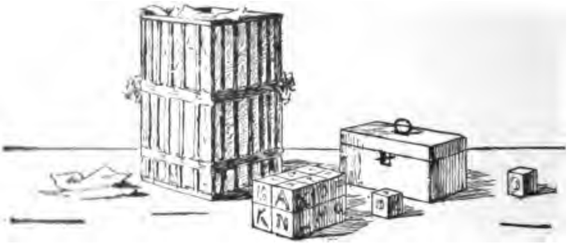
Ask the children to think what the arrangement resembles, and to try to find something resembling it on the way home. By placing a strip of wood on the tops of the solids the "dentils" of Greek architecture — very commonly used now — will be suggested.

Let the children who have tablets arrange borders or rosettes.

Try always to connect the children's work with things about them. It will be found that by the use of the simple type forms and figures in various ways, many historic arrangements can be reproduced — that they really are *type forms and figures.*

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 173.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of Lesson 1 or Lesson 4.***



CHAPTER VI.

SIXTH WEEK.—FORM.

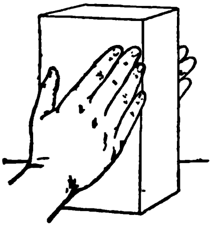
SPHERE, RIGHT-ANGLED TRIANGULAR PRISM, AND OBJECTS.

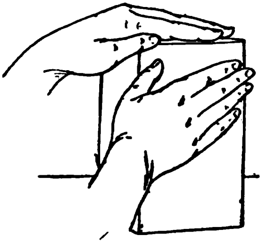
OBSERVING FORM. MODELING. SEEING AND DRAWING. ARRANGING.

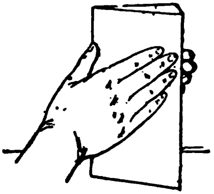
Lesson 1. **Do you remember the solid? What is its name?**

Square prism, right-angled triangular prism on each desk.

Give exercises in handling and grasping the square and triangular prisms and ask the children to tell about the action, surface, faces (plane); the position, direction, and number of the faces; the position, direction, and number of the edges; and to compare the oblong faces. Ask for the name of the new solid—***triangular prism,*** giving the name, if the children do not recall it. Write the name *triangular prism* on the board and let the children pronounce it.







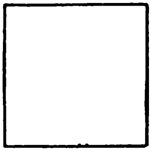


Fig. 1.

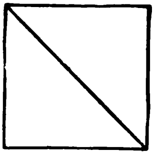


Fig. 2.

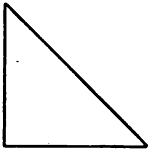
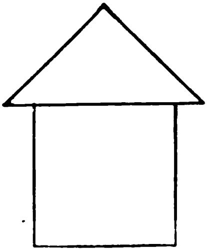


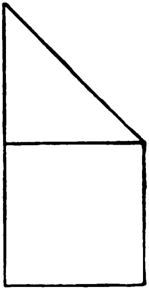
Fig. 3.

Let the children draw the end of the square prism on the board (Fig. 1)—moving the arm from the shoulder.

Let each child in every alternate row hand his triangular prism to his neighbor; let those who receive a prism put two triangular prisms together to make a square prism, and draw the end of this square prism (Fig. 2).

Let the children compare the top faces of the vertical square and triangular prisms. Ask them to count the sides of the two faces. Ask for the name of the shape of the face that has three sides — ***triangle,*** giving the name if it is not remembered. Let them show you the shape of the top faces of the two prisms by drawing Fig. 3, page 47.





Let the children build with the two solids and so discover that the oblong faces of the triangular prism are not all alike. Let them tell about the difference in the oblong faces, — that one face of the triangular prism is wider than any other oblong face, in the square prism or in the triangular prism. Ask them to describe the oblong faces according to their width, and obtain the terms ***narrow*** and ***wide.*** Let the children draw a *narrow* and a *wide* face on the board.

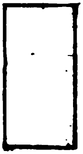


Fig. 1.

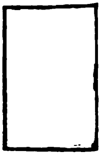


Fig. 2.

Write *semicircle*, *triangle*, *narrow*, *wide* on the blackboard, and let the children illustrate by means of the solids what each term means as they pronounce the word.

Lesson 2. **Can you make a house in clay? What solids would make it?**

Square prism, right-angled triangular prism, clay on each desk.

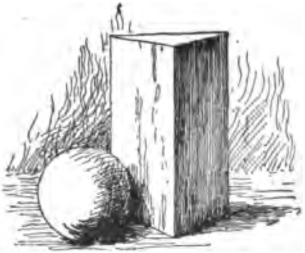
Let the children model either the triangular prism or the house made of the square and triangular prisms. Follow the order of the preceding lessons in modeling, massing the clay with the palms of the hands, and then modeling the faces and edges with the thumbs.

Lesson 3. **What is like the triangular prism? Let us show by a drawing how it looks.**

Sphere, triangular prism, paper, pencil or charcoal on each desk.

Let the children arrange the desk as in Chapters IV. and V., Lesson 3, and then place the two solids (sphere and triangular prism), to make a pleasing group.

It is hoped that the children are deeply interested in picturing objects by this time, and that there is, consequently, a growing power to *see* and to record what is seen. In this lesson the attempt should be made to get a closer observation of the solids, and a neater, clearer drawing of their appearance.



The triangular prism occurs so seldom in the toys of children or in common objects within their reach that they are less familiar with this form than with that of the solids previously studied. Let the children, therefore, look very carefully at the group and then express what they see.

Ask them to put the drawings back beside the group and to find where they can improve their pictures. Let them correct the drawings (without erasing) or re-draw them, in order to better express what they see. Accustom them to free, ready work in this pictorial drawing.

If possible, show several objects like the triangular prism. A small model of a chicken coop is easily made, and with the aid of the imagination, the hen and brood of chickens can be supplied. The chickens are not unlike spheres, and the children can picture them running about outside while the hen watches from the coop. Let the children try this or some similar drawing.

Lesson 4. **How many would like to be architects? Let us build with the solids.**

Two each of spheres and square prisms, spheres and cylinders, hemispheres and square prisms, square and triangular prisms, or cylinders and cubes on each desk.

Talk to the children about good buildings. Show them pictures of fine buildings, gateways, etc. Let the children build with their solids, trying to make as strong and beautiful things as possible. Let those who build best make a picture of their building.

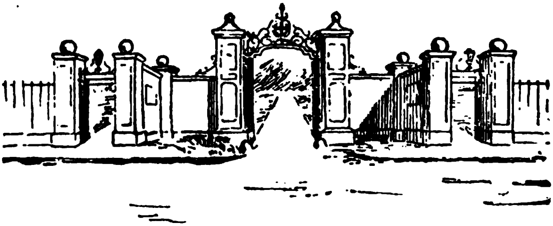
Two or three children may work together, uniting their supply of solids. In this way more extensive building can be done, and, in most cases, greater interest secured.

Hold the children to thoughtful work. Do not accept curious or amusing things, fanciful or flimsy things. Lead them to think of use and beauty, stability and grace, brought together in a pleasing whole.

"Happy is the man, who, at an early age, knows what art is." — *Goethe.*

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 154.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***



GATEWAY, HARVARD COLLEGE, CAMBRIDGE.

CHAPTER VII.

SEVENTH WEEK.—FORM AND COLOR.

ELLIPSOID AND OBJECTS. COLOR UNIT TABLETS.

OBSERVING FORM. MODELING. SEEING AND DRAWING. OBSERVING COLOR.

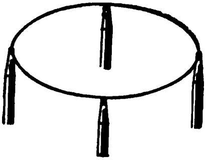
Lesson 1. **How is it like the sphere? What is the shape of its outline?**

Sphere, ellipsoid, and objects resembling the ellipsoid on each desk.

Present familiar objects resembling the ellipsoid together with the ellipsoid. Develop the concept of the ideal form — the ***ellipsoid*** — and give the name.

Let the children compare the sphere and the ellipsoid, by grasping, by action, by feeling.

Through the action of the solids, develop the idea of the resemblances and the differences in the surface, and also that the ellipsoid has one ***rounding*** face. Let the children trace the shape of the outline of the sphere, then hold the ellipsoid horizontal from left to right, and trace the shape of its outline on the solid and in the air, and find the tablet having that shape.* Give the name ***ellipse.*** Let them make a large drawing of the outline, the position of pencil, chalk or charcoal being as if for a horizontal line. Let the children practice movement, pencil or chalk in hand, before drawing. Ask the children to bring objects like an ellipsoid. Write *ellipsoid* and *ellipse* on the board and let the children pronounce the words.



Lesson 2. **How shall we make the new solid? Show what careful fingers you have.**

Ellipsoid, an object resembling the solid, and clay on each desk.

Let the children model the ellipsoid, and lead them to good observation of its proportions. When the ellipsoids are finished, let the children model some object like an ellipsoid, — a lemon, a plum, an English walnut. Do not, however, let them attempt to imitate the details of surface.

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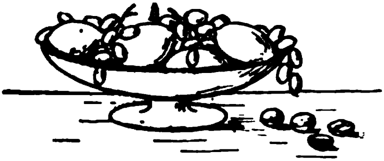
* If they have no tablets, they can cut an ellipse from paper.

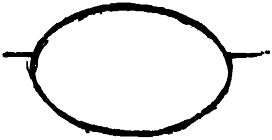


The following exercise may be taken instead of modeling an object resembling the ellipsoid.

Let alternate rows of children cut elliptical and circular tablets by bisecting the clay ellipsoids vertically or horizontally, and cutting a tablet from one half. See Chapter III., Lesson 2. Recall the name of the new shape — *ellipse*. Let the children tell about both shapes — circle, ellipse.

Lesson 3. **Let us make a picture of the new solid. How much can you see?**

Ellipsoid, paper, pencil or charcoal on each desk.



Recall the pictures of preceding lessons. Tell the children they are getting *new material* for pictures, and must make a careful *study*. Let the children draw the ellipsoid as it looks lying on the pile of books at the back of the desk.

Lesson 4. **Have you ever had a wonder box? Let us take good care of the beautiful colors.**

Box of color tablets and piece of gray mounting board, 10 x 14, on each desk.

Let the children place the mounting board with its long edges parallel to the front edge of the desk. Tell them there is a beautiful surprise in the boxes, and, if they can open the boxes very carefully, they will not injure what is within. When they have slipped the boxes out of the covers, show them how to turn the boxes over on the mounting board so as to leave the tablets in a little pile.* Let them cover the boxes and place them at the back of the desk.

If the children have never seen this material before, their delighted surprise will give a strong impetus to the exercise. Let them enjoy the color,— they will handle it with care, because of their pleasure in it. Ask them to spread out the tablets and to choose the one they like best. Let them place this tablet at the back of the desk away from the rest. (It is hoped that a record of this first choice may be made and kept to compare with a similar record made later in the year. This record can be made while the next work is being done by the pupils.)

The following exercise in "housekeeping" will serve to show how many of the children distinguish colors readily. Ask the children to see how many colors they can find and to make a pile of all the tablets of one color. Let them add the chosen tablet to the pile of tablets of the same color. The work should not be watched too closely at first, lest the children feel they can appeal to the teacher for advice; but it should be observed sufficiently to find how much the children really *see* of color.

Ask the children how many piles of tablets they have, and what else they have to tell about the tablets. (They will find six tablets that do not belong in the piles.) Let them move the piles of tablets to the right side of the card, also the six tablets which would not go into the piles.

Ask the children to place the pile of tablets like the one shown (red) on the farther right corner of the card; the pile like the next tablet shown (orange) just in front of the first pile; the pile like the next tablet shown (yellow) just in front of the last — and so on with the piles of green, blue, and violet tablets in the order given, leaving the six tablets where they are. (Names of colors are not to be given.)

Ask the children to take out all the ***circles*** from the first pile of tablets (red), and place them in a pile on the upper left corner of the board. Ask them to take all the ***squares*** from the same pile, and place them at the right of the pile of circles. Ask what remains of the pile. (*An oblong*.) Tell the children to place this at the right of the pile of

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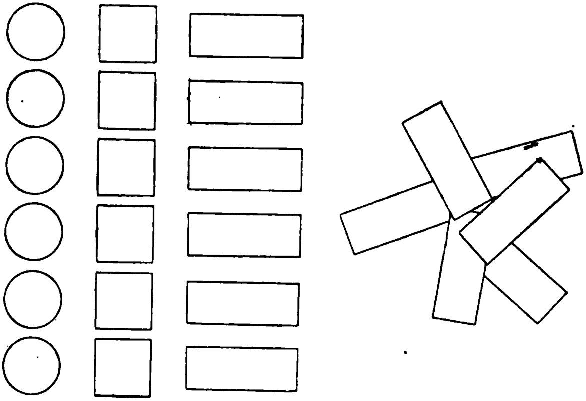
*** This is the simplest way to remove the material from the boxes in any exercise, and is also the least destructive to the material.**

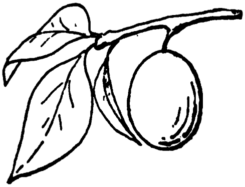
squares, with the longest way from left to right. Have the children separate the tablets in the remaining piles in the same way, placing the circles, squares, and oblongs in rows on the left side of the board. Let the children look once more at the six remaining tablets to see whether they can be placed with those at the left of the board.



Show the children how to take up all the circles and put them in the box, then all the squares, then all the oblongs. This way of putting the material in the boxes will preserve it and make it a more lasting enjoyment to the children.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 163.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***



CHAPTER VIII.

EIGHTH WEEK.—FORM AND COLOR.

OVOID, OBJECTS. COLOR UNIT TABLETS.

OBSERVING FORM. MODELING. SEEING AND DRAWING. COLOR RELATIONS.

Lesson 1. **What other solids does it resemble? What is most like it?**

Ellipsoid, ovoid, and objects resembling the ovoid on each desk.

Present familiar objects resembling the ovoid together with the ovoid. Develop the concept of the ideal form — the ***ovoid*** — and give the name. Let the children compare the ellipsoid and the ovoid. Let them observe and describe the action, surface, and face of the ellipsoid and the ovoid. Give the term *rounding* to describe the face of the ovoid.

Let the children study the outline of the ovoid and of the ellipsoid in vertical positions. *See development of the ellipsoid, page* 51. Let them trace the outline of both solids in the air and find the shapes among the tablets. Give the name of the shape — ***oval.*** Let them draw the outline of the ellipsoid on the board. Secure good crayon holding and movement (Fig. 1). Let the children draw the outline of the ovoid on the board with the larger end at the top and with the smaller end at the top (Fig. 2). Ask the children to bring objects like an ovoid. Write *ovoid* and *oval* on the board and let the children pronounce the words as they handle the things.

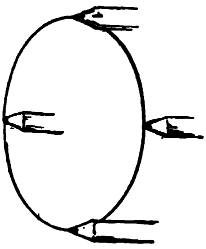


Fig. 1.

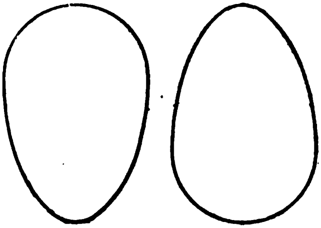
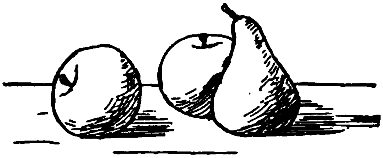


Fig. 2.

Lesson 2. **Can you model the new solid carefully? Make a good surface.**

Ovoid, and object resembling it, and clay on each desk.

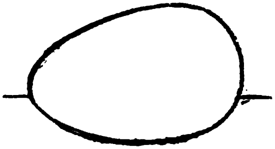
Let the children model an ovoid, and lead them to observe the proportions carefully. When the ovoids are completed, let them model an object resembling the solid. Natural forms are desirable as models for work in clay.



If preferred, the following exercise may be given instead of modeling an object like an ovoid. Let the children cut the tablets to show the different outlines of the solid — circular and oval. Recall the name of the new shape — the *oval.* Let the children tell about both shapes — circle, oval.

Lesson 3. **How does it look? Make a careful drawing.**

Ovoid, paper, pencil or charcoal on each desk.



Let the children draw the ovoid as it looks lying on a pile of books at the back of the desk. Let this work be done with a true spirit of study. Keep the thought of the *picture* and of the new material they are gaining before the children. Talk with them about objects resembling the ovoid and interest them in collecting objects of good form and color with which to make groups in the future. Vases, pitchers, rose jars, etc., are quite as much admired and enjoyed for their beauty of form and color by these little people as they are by older ones.

Lesson 4. **Let us make something beautiful from a sunbeam. How large a family can you find?**

Box of color tablets and piece of mounting board on each desk. Prism and lamp (if there is no sunshine), Color Chart, No. 1, on teacher's desk.*

Let the children open the boxes, turn out the material carefully, and then return all the circles and squares to the box.

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* The Prang Color Chart, No. 1, Twelve Standard Normal Colors, completing in equal intervals the ideal color unit for color education in public schools.

Ask the children if they have any relations. Ask them what relations are, and how we sometimes know that people are related by looking at them. Direct the question to the class in such a way that the children will tell you that relatives are alike in some respects and unlike in others. Ask if any one can see any relations in the color household. There are twelve children in this large family; they are to stand in a row, arranged according to their resemblance to each other. If the children are less mature than is usual in this grade, it may be well for them to begin with the tablet they like best, putting beside it the one nearest like it in color, then beside the second the one most like it, and so on.

Let the children arrange, leading with different colors, as often as the time of the lesson will permit. Do not tell the children their arrangements are right or wrong. Keep a record of the result.

The following arrangements will show that the children understand the relations of the twelve colors well enough to make the correct succession of color:

1. Red, red orange, orange, yellow orange, yellow, yellow green, green, blue green, blue, blue violet, violet, and red violet; or,—
2. Red, red violet, violet, blue violet, blue, blue green, green, yellow green, yellow, yellow orange, orange, red orange.
3. Orange, yellow orange, yellow, yellow green, green, blue green, blue, blue violet, violet, red violet, red, red orange; or,—
4. Orange, red orange, red, red violet, violet, blue violet, blue, blue green, green, yellow green, yellow, yellow orange.

Many more correct arrangements according to relations can be made from the spectrum tablets by beginning with other colors.

It is not improbable that a large number of the children will be able, without seeing the chart, to lay with the tablets the ideal color unit as shown in the Color Chart, No. 1, simply from a perception of the relations of the colors, even if they have never observed color relations before.

There will, doubtless, be a number of children whose color sense is not well-developed, and who will not, therefore, appreciate color affinities sufficiently to bring all the tablets together correctly. To quicken the interest of all, and especially to present the entire unit — showing all the relations — to those who are slow to distinguish color or to feel color harmonies, show the Chart, the representation of the *ideal color unit.* This should not be done for the sake of the imitation of the chart, but the chart should be shown as a beautiful thing, and for the delight of the children.

If the school-room conditions will permit show the solar spectrum to the children. This can be done with a lamp, if there is no sun. Do not attempt an analysis of the spectrum but let it remain in the minds of the children as a beautiful whole.

Talk with the children about the rainbow and read to them some selection appropriate to the lesson. The following poem will show the spirit of what might be read:

THE WATER-BLOOM.

A child looked up in the summer sky
Where a soft, bright shower had just passed by;
Eastward the dusk rain curtain hung,
And swiftly across it the rainbow sprung.

"Papa! papa! what is it?" she cried,
As she gazed with her blue eyes opened wide
At the beautiful arch that bridged the heaven,
Vividly glowing with colors seven.

"Why, that is the rainbow, darling child,"
And the father down on his baby smiled.
"What makes it, papa?" "The sun, my dear,
That shines on the water-drops so clear."

Here was a beautiful mystery!
No more questions to ask had she,
But she thought the garden's loveliest flowers
Had floated upward and caught in the showers —

Rose, violet, orange marigold —
In a ribbon of light on the clouds unrolled!
Red of poppy and green leaves, too,
Sunflower of yellow, and larkspur blue,

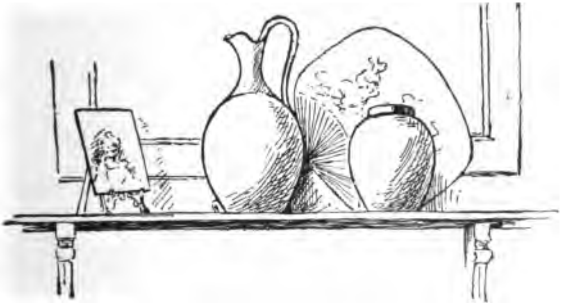
A great, wide, wondrous, splendid wreath
It seemed to the little girl beneath;
How did it grow so fast up there,
And suddenly blossom, high in the air?

She could not take her eyes from the sight;
"Oh, look!" she cried in her deep delight,
As she watched the glory spanning the gloom,
"Oh, look at the beautiful water-bloom!"— *Celia Thaxter.*

Let the children return the oblong tablets to the box and see that the circles, squares, and oblongs are all in neat piles before putting on the cover.

Lesson 5. **Options,**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 163.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of week's work.***



CHAPTER IX.

NINTH WEEK.—FORM AND COLOR.

EQUILATERAL TRIANGULAR PRISM, OBJECTS.—COLOR UNIT TABLETS.

OBSERVING FORM. MODELING. SEEING AND DRAWING. IDEAL COLOR UNIT.

Lesson 1. **Let us compare them. Which shape is more pleasing?**

Right-angled triangular prism, equi. tri. prism, and objects resembling the equi. tri. prism, right-angled and equilateral triangles on each desk.

Present familiar objects resembling the equilateral triangular prism, together with the solid. Through the action of the solid, let the pupils gain the idea of the surface, faces, etc. Let the children draw the shapes of the different faces on the board. Let the children compare the square prism, the right-angled triangular prism, and the *equilateral triangular prism*, and show the resemblances and differences in the shapes of the faces by drawings on the board.

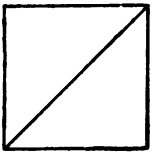


Fig. 1.

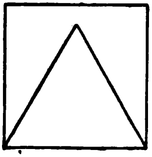


Fig. 2.

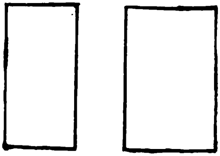
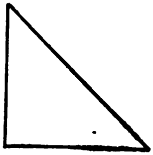
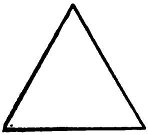


Fig. 3.

Ask them the name of the shape of the ends of the triangular prisms —*triangles*. By comparison, let them discover that the sides of one of the triangles are all equals — give the name ***equilateral triangle.*** Then give the name ***equilateral triangular prism,*** or, if preferred, ***equi. tri. prism.*** Let the children find the triangles among the tablets or cut out the shapes in paper. Write *equilateral triangular prism* on the board and have the children show the solid as they pronounce the term.



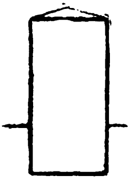


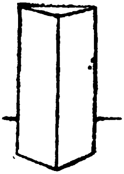
Lesson 2. **Can you make good edges and corners? See that you use your fingers well.**

Equi. tri. prism and objects resembling it and clay on each desk.

Let the children model an equilateral triangular prism. When the prism is completed, the children may model an object resembling an equilateral triangular prism, or cut tablets for the oblong and the triangular faces.

Lesson 3. **What shall we draw to-day? Can you show what you see?**





Equilateral triangular prism, paper, pencil or charcoal on each desk.

Let the children draw a picture showing how the equilateral triangular prism looks when placed on a pile of books at the back of the desk. Let them place the solid with a face in front, then with an edge in front and show by drawing how it looks in both positions.

Lesson 4. **Let us find their nearest relations. Can you make an ideal color unit?**

Box of color tablets and mounting board on each desk. Sheets of paper of the six leading colors on the teacher's desk.

Let the children obtain the material for the lesson as usual, keeping only the color unit tablets. Ask the children to spread the tablets out on the mounting board and to put together any two tablets that seem to be very near alike. Watch the association made by the children and use this observation in conducting the remainder of the exercise. Ask them to place together any three or more tablets that seem very much alike, and observe what the children find. The next part of the exercise should be based upon what has been gained, from the children's work in the preceding steps.

Give to each child, if possible, a piece of paper — orange, for instance, and ask the children to place the piece of paper on the farther edge of the mounting board to the left. Ask them to find all the tablets resembling this paper and to place all the tablets in good order on the board below the paper. In the same way give green and violet paper, asking the children to find and arrange the tablets as before. If paper can not be given to each child, show a large sheet of paper of each of the colors suggested and ask the children to find and arrange the tablets as in the exercise given above.

Without having the tablets moved, ask the children to bring all of them together in good order. If the previous arrangement has been wisely made, the ideal color unit can be very quickly arranged. If the full relation is seen by the children, let them spread out the tablets once more and then make the ideal color unit again, either in a row or in a circle. It may be well to show the Color Chart No. 1 again, in order to have all the children see the ideal color unit. The chart should not be shown as the thing that ought to be obtained, but as a thing of interest. Should the children recognize the chart as that for which they have been working, let them talk about it freely.

Let the children put away the material as in previous lessons.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 164.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER X.

TENTH WEEK.—FORM AND COLOR.

CUBE AND OBJECTS.—DECORATIVE TABLETS.

PATTERN DRAWING. CUTTING AND MAKING. SEEING AND DRAWING. COLOR NAMES.

Lesson 1. **Can you see the relation of the faces? Show what careful fingers you have.**

Cube, paper, and scissors on each desk.

Develop the idea of the surface of the cube by creasing the faces in paper. Be sure that all the faces are creased, and in such order as will enable the children to appreciate their relations when they appear in the paper. Let the children cut out the creased faces (Fig. 1) and fold them to make the cube (Fig. 2). By folding, the children will discover the necessity for laps to hold the cube together. Let them find how many laps are needed.

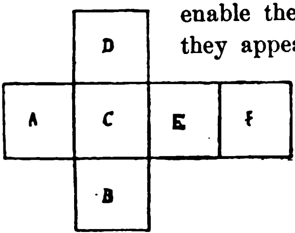


Fig. 1.

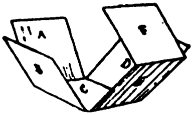


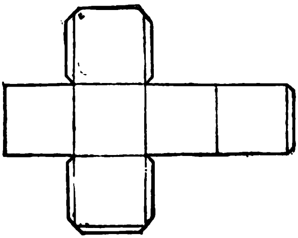
Fig. 2.

Talk with the children about the *surface* of the cube and lead them to see that what they have made represents the surface.

Lesson 2. **Can you make a cube? Where shall we draw the laps?**

Cube, paper, scissors, mucilage, and toothpick on each desk.

Let the children crease patterns of the cube and draw the necessary laps to hold the patterns together, studying first to see where the laps may be placed most advantageously.* Let them cut and paste the patterns very neatly to make hollow cubes.



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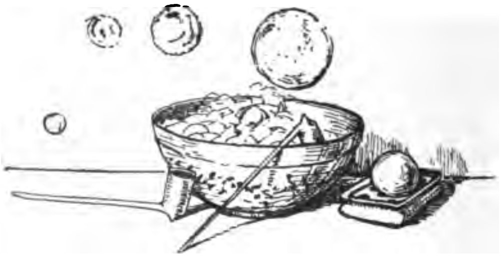
* The Prang Pattern Sheet No. 1 gives the pattern of the cube and sphere, printed on manila cardboard, ready for cutting and making.

Lesson 3. **Let us make another picture. What have you brought like the sphere, hemisphere, and square prism?**

Object resembling a sphere, a hemisphere, and a square prism; paper, pencil or charcoal on each desk.



Let the children think how they can place their objects to make them tell a story. Explain what this means by showing a picture like the above in which the story of the making of soap-bubbles is plainly told. Ask them to name the picture shown, and to think what their pictures can be named when finished.

With the interest thus awakened, hold the children to thoughtful observation of their groups, and try to keep the delight in the study while the drawing is being done. Ask them to hold the drawings back and see if they tell the truth about the objects,—as to where they are placed, the way they look, etc. *Encourage serious, thoughtful work in all these exercises.*

Lesson 4. **Can you think of a pleasing arrangement? Of what color will you make it?**

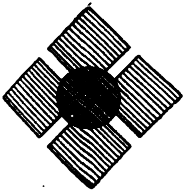
Box of color tablets, mounting board, and, if possible, two strips, ¼ inch by 9 inches, of each of the six leading colors on each desk.

Let the children take out all the color tablets and return the twelve color unit tablets to the box.

In the first part of this exercise the children are not to be restricted either in the number or the color of the tablets used. The object is to see what colors they will use and what arrangements they will find pleasing. Do not suggest that they may use any of the arrangements made in preceding work, but let them try to make as many pleasing arrangements, either in rows or in groups, as they can. Encourage the children to talk about their arrangements. Show some of the best, and ask the class to tell about them.

Ask the children to choose a color with which to work, then let them select all the circular and square tablets of that color. Let the children work freely with the tablets, making borders, with the aid of the marginal strips given, or making rosettes.

The children will, no doubt, observe that one side of the tablet is of a different tone from the other. This difference in tone can be utilized in arrangements by leading the children to use alternately normal and light units in their borders, or the lighter tone for the repeats or units repeated around the centre, and the normal tone for the central figure in the rosettes. This can be suggested by a flower, which is generally darker toward the centre, and the pupils will be led, unconsciously, to the expression of stability in arrangement by difference in tone or strength of color.



Encourage the children to talk about their work. Show some *very simple* borders and rosettes and ask the children to find similar ones outside. *Be sure to incline the thoughts toward simple and beautiful things.*

Let the children talk about the tablets they have been using. Ask them to name the colors used. If the children are not able to do this do not urge them, but leave the work for a later lesson. This exercise will enable the teacher to see how well the children are prepared to take up the next exercise.

Lesson 5. **Options.**

(*a*.) ***Expression in nature study.*** *See Appendix I., page* 155.
(*b*.) ***Other illustrative drawing.*** *See Appendix II.*
(*c*.) ***Review of week's work.***

CHAPTER XI.

ELEVENTH WEEK.—FORM AND COLOR.

SQUARE PRISM AND OBJECTS.—COLOR UNIT AND DECORATIVE TABLETS.

DRAWING PATTERN. CUTTING AND MAKING. SEEING AND DRAWING. OBSERVING INDIVIDUAL COLORS.

Lesson 1. **Let us crease the faces again. Where shall we put the square faces?**

Square prism, paper, scissors on each desk.

Let the children crease the faces of the square prism and cut them out as shown in Fig. 1. Let them discover where it will be best to put the square faces in order that the pattern may go together well.

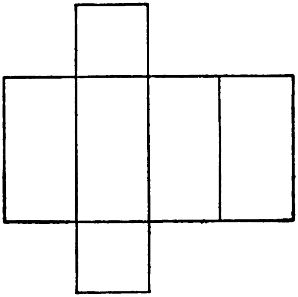


Fig. 1.

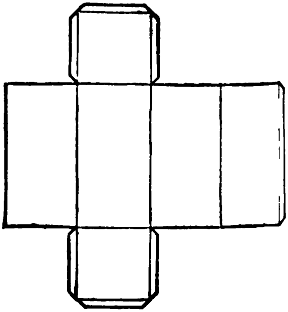


Fig. 2.

Lesson 2. **Let us make another solid. Can you fold the long edges straight?**

Square prism, paper, scissors, mucilage, and toothpick on each desk.[*]

Let the children crease the pattern, draw the laps, and cut out the pattern for the square prism, Fig. 2. Let them fold and paste the pattern to make the solid.

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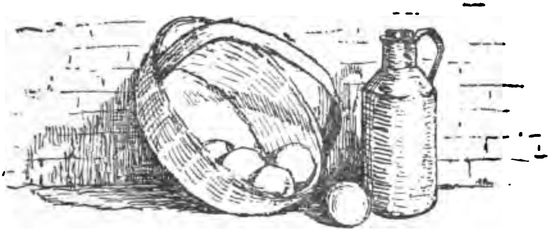
[*] The Prang Pattern Sheet No. 3 gives the pattern of the square prism, printed on manila cardboard, ready for cutting and making.

Lesson 3. **What would you call the picture? Can you make one and name it?**

Object resembling a sphere, a hemisphere, and a cylinder; paper, pencil or charcoal on each desk.



Show pictures which are simple, but capable of telling their own story. Recall the lesson of the preceding week and ask the children to name the pictures shown. In the one given there is a suggestion of baked sweet apples and cream.

Let the children arrange the objects on a pile of books in a pleasing group and draw the group as they see it. Try to get closer observation and truer drawing than heretofore. Let the children hold the drawing back and take a careful look at the group and the picture together. Let them re-draw the picture if they can make it better. Let them write the name of the picture neatly under the drawing.

Or, let the children draw a picture appropriate to Thanksgiving (see page 68), — a roast turkey on a platter, a boy and a girl pulling a "wish-bone," etc., bringing in the spirit of the season.

Lesson 4. **What is the name of the color? Let us make a border.**

Box of color tablets, mounting board; if possible, two strips of paper, ¼″ × 9″, — *red, orange, or yellow, — on each desk.*

Let the children lay the ideal color unit at the farther edge of the cardboard. Show a square of red paper and ask them to find all the circles and squares of that color — place the circles in front of the tablet of the same color in the ideal color unit — place the squares of the same color in front of the circles. Ask for the name of the color — ***red.***

Give a similar exercise with ***orange*** and ***yellow.*** Should the children not be able to give the names, they should be told.

Let the children lay a border of red, orange, or yellow tablets, using strips of paper of the same color as the tablets for marginal lines.

Ask the children to think of things that are red, orange, or yellow. Lead them to think of the sunlight or the warmth of the fire as they look at these colors. Ask what trees or flowers show those colors.

Such songs as "The Dance of the Leaves," from the First Reader and "Little Dandelion," from the Second Reader of the "Normal Music Course," might be sung.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 165.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XII.

TWELFTH WEEK.—FORM AND COLOR.

EQUILATERAL TRIANGULAR PRISM, OBJECTS.—COLOR UNIT AND DECORATIVE TABLETS.

DRAWING PATTERN. CUTTING AND MAKING. SEEING AND DRAWING. OBSERVING INDIVIDUAL COLORS.

Lesson 1. **How many faces make the surface? Draw carefully.**

Equilateral triangular prism, paper, scissors on each desk.

Develop the idea of the surface of the equilateral triangular prism, Fig. 1. Let the pupils discover how they are to associate the faces in order to make the pattern and plan the laps.

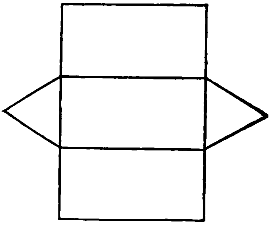


Fig. 1.

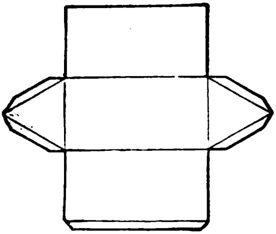


Fig. 2.

Lesson 2. **Let us make this the best of all. See how carefully you can cut and fold.**

Equi. tri. prism, paper, pencil, mucilage, and toothpick on each desk.

Let the children crease the faces of the equilateral triangular prism in paper, draw the laps, Fig. 2, and cut and paste the model.*

Lesson 3. **Let us make a fine picture. What have you brought?**

Objects resembling a sphere, a cylinder and a square prism; paper, pencil or charcoal on each desk.

It is hoped that the interest in the picture drawing is held from week to week, and that the children have looked forward to the lesson of to-day, providing pleasing objects, good in color as well as in form.

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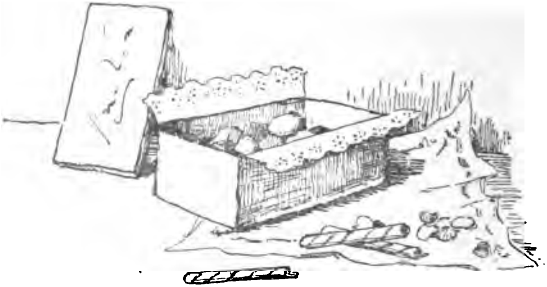
* The Prang Pattern Sheet No. 8 gives the pattern of the equilateral triangular prism, printed on manila cardboard, ready for cutting and making.

Let the children arrange their groups so that a story may be read in them. Let them think what they will name their pictures, but let them keep it a secret until they write the names under the pictures.

Lead the children to good observation, truthful representation, and careful comparison of the picture and the group — but above all keep the delight in the work.



Lesson 4. **How many color names do you know? What is a good color for a rosette?**

Box of color tablets and mounting board on each desk.

Let the children lay the ideal color, find, place, and name green, blue, and violet, as in the color lesson of the preceding week.

Ask them to make rosettes with their decorative tablets, using either green, blue, or violet, — whichever color they think will be best for the kind of rosette they make. It would be interesting to know what governed the choice of color.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 174.

(*b.*) ***Other illustrative drawing.*** *See Appendix II.*

(*c.*) ***Review of week's work.***

CHAPTER XIII.

THIRTEENTH WEEK.—FORM AND COLOR.

NINE SOLIDS.—TONES OF RED, ORANGE, YELLOW.

OBSERVING FORM AND COLOR. SEEING AND DRAWING. OBSERVING HISTORIC FIGURES.

Lesson 1. **In how many positions can you place the solids? In what positions are the faces?**

Cube, cylinder, square prism, right-angled triangular prism on each desk; large sphere, cube, hemisphere on teacher's desk.

Let the children place the solids *standing* or *upright* on the back of the desk. Ask them how they have named this position — ***vertical.*** If they do not recall the term, give it. Let the children try the teacher's sphere on her desk and on the table, and tell why it will not stay on the desk, and will stay on the table, — because the table is *level.* Let them place the square prism so that some of the oblong faces are *level.* Ask them what they have called this position — ***horizontal.*** Give the term if necessary.

Let the children place their solids in a *vertical* position, in a *horizontal* position, then in a position that is neither vertical nor horizontal but *leaning.* Let them place the square and triangular prisms in a horizontal position and find the faces that are horizontal, — vertical, — *leaning* or *slanting*, the edges that are horizontal,— vertical, — leaning or slanting. Tell them the slanting faces and edges are ***oblique.*** Let them find surfaces and edges that are *oblique* (also those that are vertical and horizontal) about the room.

Let them place the solids so as to bring certain faces (then other faces) into vertical, horizontal, or oblique positions. Let them try this with the hemisphere on the teacher's desk, and ask how many faces can be said to be in a vertical, horizontal, or oblique position in this solid. Let them try the sphere also. This will be a good test of their appreciation of the positions they have been observing.

Write *upright — vertical*, *level — horizontal*, *leaning* or *slanting — oblique* on the board and ask the children to pronounce the words and to show by handling the solids what each term means as it is pronounced. The children might be asked to answer the teacher's words by pantomime, before they are called on to pronounce the words themselves.

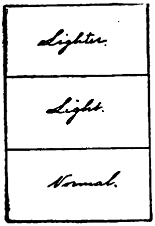
Lesson 2. **Can you sing a scale? Let us make a scale of colored paper.**

Several squares of normal, light, and lighter red, orange, and yellow paper 5″ × 5″ on the teacher's desk. Scaling pieces of the same color on the children's desks.

Show the children a sheet of normal red paper and ask them to name the color — *red.* Hold beside this sheet a large sheet of light red paper and ask the children to describe its color. Add a large sheet of lighter red paper to the collection and ask the children to describe the last sheet. Pin the three sheets on the wall with the normal red at the bottom, the light red next above, and the lighter red at the top. Lead the children to tell about the different sheets: the one that is reddest, that makes them think most of red; the lightest red sheet; the sheet that is between the reddest and the lightest. Give the names, — ***normal red*** for the sheet that makes the children think most of red; ***light red*** for the sheet that is neither the reddest nor the lightest but is between the two; ***lighter red*** for the lightest sheet. (The term lighter red is used instead of lightest red because it is thought that another light tone may be added to the scale later. The children will, in many cases, use the term lightest — which is legitimate for the conditions — but they will take up the other term readily.)

Lead the children to think of the colors as a series of steps in color — *a scale.* If they think of the musical scale and its tones, they will think of this color scale as made up of tones. Let them name the ***tones*** of the ***scale of red, — normal red, light red, lighter red.***

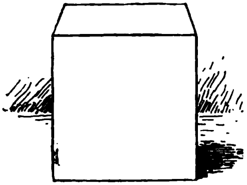
Develop the idea of the *scales* and the *tones of the scales* of orange and yellow. Let the children select the scales of red, orange, and yellow from the papers on the teacher's desk. If the children have the regular supply of colored paper put up for this grade, Assortment B, they should have their envelopes on their desks and, after finding the scales among the teacher's papers, should find and lay the scales from their own paper. They should be laid as shown in the illustration.

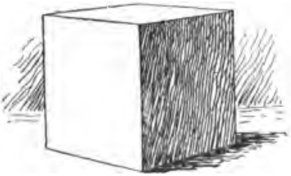


Lesson 3. **Can you see well? Let us make new pictures of an old friend.**

Cube, paper; pencil or charcoal on each desk.

Let the children place the cube on a pile of books at the back of the desk. Let them draw the cube as it looks — first *facing*, then *turned*.





This work should be done with much thought and care. That the children may not feel that this is a mere repetition of previous exercises, ask them to place the cube in definite positions — all the class to draw the cube with one face squarely toward them, then with an edge directly toward them. Let the children hold their drawings away from them and compare the picture with the appearance of the cube. Let them exchange drawings and tell what they think of each other's work. Do not influence these remarks or try to draw out other criticisms, but listen to find how much they are thinking about the drawings.

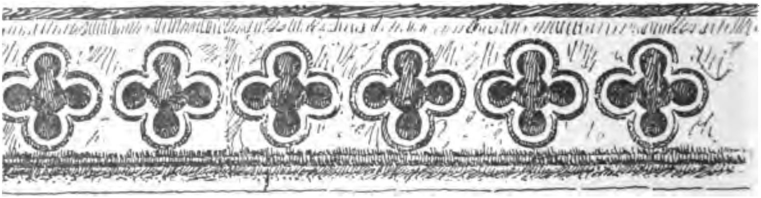
Lesson 4. **Listen to this story. Can you remember something historic?**

Five each of circular, square, and semicircular tablets on each desk.

The following statements are given in order to afford material to the teacher from which to arrange a story about the quatrefoil suited to the needs of the class.

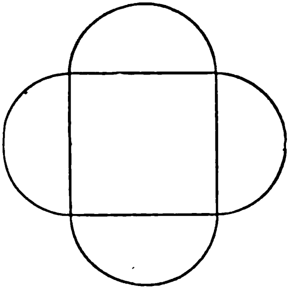
The Quatrefoil. — This is an example of historic ornament found noticeably in the Byzantine and Gothic styles, although as a simple figure it occurs occasionally in earlier and even in primitive ornament. It appeared prominently in architecture and in decoration early in the Christian centuries. The people loved to make and to have before them in their churches things that would remind them of the religion so sacred to them. Therefore they put into their churches symbolic figures,— figures which by their color, their shape, or the number embodied, would recall to them some part of their religion. Their decoration was full of symbols. All four-leaved figures stood to them as emblems of the four evangelists, Matthew, Mark, Luke, and John. The semicircle in the quatrefoil, as well as in the kindred trefoil, represents the *nimbus* or glory of the head; so that the quatrefoil is doubly symbolic. Wherever it appeared, not only in flat decoration but also in window tracery and in other wood and stone work, it was a symbolic figure.

Its Beauty. — So, many hundred years ago, people were drawing this figure. Its pleasing shape has made it a favorite, even where its symbolism is not remembered. There is a pleasure in looking at a square because of its symmetry and its regularity. For the same reason, those figures known as square figures — that is, having a general square shape and the four sides the same in shape and in position with regard to the centre — give pleasure. The symmetry of such figures becomes more apparent in proportion to the variation of these four sides as to outline from the straightness of the sides of the square. This kind of symmetry is produced by what is called **repetition about a centre**; the parts are all placed with reference to the centre. The quatrefoil is an example of such arrangement.



The Gothic ornament above shows how the simple figures given in the earlier part of the work (and previously made by the children) and the quatrefoil just described were combined and have been and still are used in church decoration. The example given is from the Cathedral of Bayeux.

Let the children make a quatrefoil with a square and semicircles.* Ask them to describe the figure and see whether they think of its being



four-leaved. Talk with them about the figure, leading them to see why it is called a ***four-leaved figure*** or ***quatrefoil.***

Write *four-leaved figure — quatrefoil* on the board, and let the children pronounce the words.

Encourage the children to make collections of examples illustrating the various exercises in arrangement and decoration, and spend a little time in talking with the children about the examples they bring in order to influence them to make better selections in the future. Collections of pictures illustrating quatrefoils may be made. The work of placing and mounting these pictures neatly affords good practice in manual training.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 165.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of week's work.***

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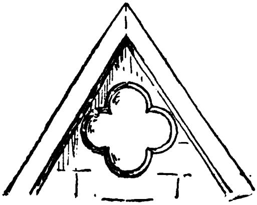
* If they have no tablets, they may cut a square and semicircle from paper.



CHAPTER XIV.

FOURTEENTH WEEK.—FORM AND COLOR.

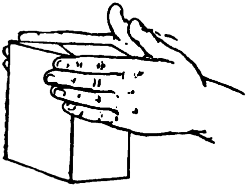
CUBE AND PRISMS.—TONES OF RED, ORANGE, YELLOW.

OBSERVING FORM. CUTTING SCALES. SEEING AND DRAWING. DRAWING HISTORIC FIGURE.

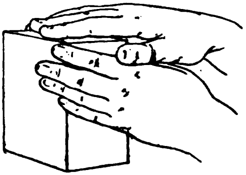
Lesson 1. **Let us find how the faces are placed with regard to each other. Can you describe the relations?**

Cube, square prism, right-angled triangular prism on each desk.

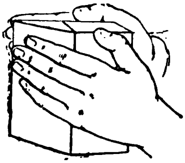
Let the children place the square prism on the desk in a vertical position, and behind it the right-angled triangular prism, also in a vertical position, with a narrow face against the back face of the square prism. Let the children place their hands on *opposite* faces of the square prism and let them discover by movement on the faces, that these faces can never come together, — that they are just as far apart in one place as in another. Ask them to remember how the faces are placed with regard to each other.



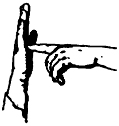
Let the children move one hand up so that it rests on the top faces of the two solids (the other hand remaining as in the preceding exercise) and then ask them to bring them together at the edge between the faces. Let them think how these faces are placed with regard to each other, and how they come squarely together.



Let the children place the hands on the left and right faces of the solids, then ask them to move their hands from them on the solids until the hands come together. Let them think how the faces on which they start are placed with regard to each other — they will never meet; then ask them to think how the faces that they find by moving from them are placed with regard to each other — they slant toward each other till they meet — they come obliquely together.



Let the children repeat the three exercises, thinking of the relation of faces — faces opposite, the same distance apart all the way, and never meeting; faces coming squarely together; faces coming obliquely together. Ask them what the first relation is called — ***parallel to.*** If it is not remembered it must be given. Give the name of the next relation — ***perpendicular to;*** and the last relation — ***oblique to.*** Let the children find objects or parts of objects about the room that are *parallel to* each other, *perpendicular to* each other, and *oblique to* each other.



The illustrations given suggest how children may be led to appreciate the relation *perpendicular to* under different circumstances. Hold closely to the thought that the objects or parts must come *squarely* toward each other — generally forming a square corner.

Write *parallel to each other*, *perpendicular to each other*, *oblique to each other* on the board, and as each term is pronounced, let the pupils show what is meant by handling the solids.

Lesson 2. **Can you make a scale of colored paper?**

Box of color tablets, mounting board, normal, light, and lighter tones of red, orange, and yellow on each desk.

If the children have the colored paper, Assortment B, let them arrange the ideal color unit on the nearer side of the mounting board. This is *scaling according to hue.** Ask them to place the red, orange, and yellow tablets a little higher up than the rest — about a quarter of their length.

* Should the children not be supplied with the regular package of colored paper for this grade, Assortment B, the lesson following on page 78 may be given instead, so that the children may cut the materials for the scales to be pasted in the next lesson.

Let the children take the pieces which will make the scales of red, orange and yellow and place them above the corresponding tablets in the ideal color unit as shown in the illustration on page 88. This is *scaling according to tone.*

It is not expected that the children will learn these terms — scaling by hue and scaling by tone; they are given as an aid to the teacher.

Three sheets each of normal, light, and lighter red, orange, and yellow paper, 4″×4″ or 5″×5″, for each group of eight pupils. Scissors on each desk.

Each group of eight children will have nine squares of paper (three tones of each of the three colors), each of which is to be divided into eight equal parts. In any school-room there are several children much more expert with the fingers than the remainder of the class. Divide the class so that each group of eight children will contain one child capable of dividing two squares of paper while the remainder divide one. Give to the more capable pupil two squares and to each of the others one square of paper. Dictate to the class the folding shown in Fig. 1. Show the children how to bisect the square as illustrated in Fig. 2, then how to cut each of the halves into four oblongs by the folds. Give a little assistance, if necessary, to the children who have an extra square to cut while the less rapid children are finishing this last step in the cutting.

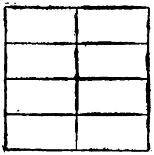


Fig. 1.

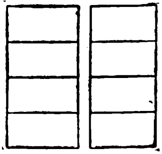


Fig. 2.

Let the children pile up the oblongs neatly and have them collected very carefully. These are to be kept for the succeeding exercise.

Lesson 3. **Let us make a picture of the prism in a vertical position. Draw thoughtfully.**

Square prism, paper, pencil or charcoal on each desk.

Let the children draw the square prism as it looks standing on a pile of books at the back of the desk. Let them draw it first with a face toward them—then with an edge toward them. Keep the same spirit with this drawing as with that of Lesson 3 in the preceding chapter.

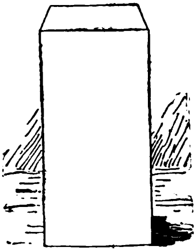


Fig. 1.

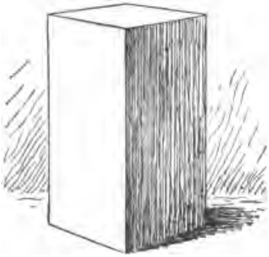


Fig. 2.

Lesson 4. **Can you bisect? Let us draw a quatrefoil.**

One square and four oblong tablets, two sheets manila paper, 6×9, *pencil or charcoal on each desk.*

Show the children what is meant by bisection. Let them bisect the long and the short edge of one of the sheets of paper, holding the pencil *perpendicular to* the edge to be bisected.

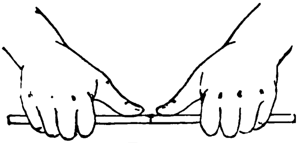


Fig. 1.

Recall the lesson on the quatrefoil and ask the children to make the figures with their tablets. Ask them to follow your dictation in order that they may be able to draw the quatrefoil. Dictate as follows:—

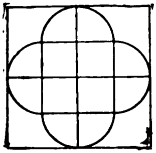
Draw a square about four inches side, on the centre of the sheet of paper. Bisect the left and upper sides of the square. Draw a horizontal line from the bisection mark at the left, across to the right edge, and a vertical line from the bisection mark on the upper edge down to the lower edge.

How have you divided the square? What are these lines called? (*Diameters.*)

(If the children do not recall the term, it should be explained and given.

Place a light mark in the centre of each of the four squares made by drawing lines from the bisection marks. Connect the marks by horizontal and vertical lines.

What have you just drawn? Draw a semicircle on each side of this small square.



What figures have you drawn?

It will be well to give an exercise in circular movement before asking the children to draw the semicircles. If there is time, let the children draw the quatrefoil again in order to make a better drawing.

Lesson 5. Options.

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 174.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XV.

FIFTEENTH WEEK.—FORM AND COLOR.

CUBE AND PRISMS.—TONES OF RED, ORANGE, YELLOW.

OBSERVING FORM. PASTING SCALES. SEEING AND DRAWING. OBSERVING HISTORIC FIGURE.

Lesson 1. **How do the length and width compare? What is the proportion?**

Cube, square prism, oblong and square, and three squares of manila paper 6″ × 6″ on each desk. All the solids on the teacher's desk.

Lead the children to discover the proportion of the cube to the square prism, of the square to the oblong, of the short side of the oblong to the long side. Let the children fold a diameter of a square of paper and cut the paper on the diameter. Give the term ***proportion 1 to 2.*** Let them find this proportion in the solids on the teacher's desk and in objects about the room.

Let the children fold another square of paper as in Figs. 1 and 2. Let them cut off one row of squares (Fig. 3). Let them compare the width of the oblong made, with the length, or the number of squares in the width with the number in the length, and discover ***proportion 2 to 3.*** Let them find this proportion in the solids on the teacher's desk and about the room.

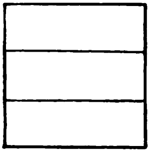


Fig. 1.

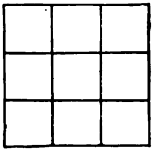


Fig. 2.

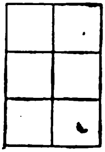


Fig. 3.

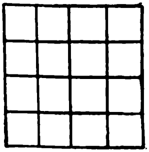


Fig. 4.

Let the children fold the remaining square of paper as in Fig. 4. Let them cut off one row of the squares, then let them compare the width of the oblong with its length and discover ***proportion 3 to 4*** (Fig. 5.) Ask the children to bring objects of the

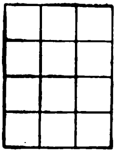


Fig. 5.

different proportions, or to make simple objects of the proportion 1 *to* 2, 2 *to* 3, *or* 3 *to* 4.

Write *proportion* 1 *to* 2, *proportion* 2 *to* 3, *proportion* 3 *to* 4 on the board and let the children read the terms and show what they mean.

Lesson 2. **How careful can you be? Let us paste scales of red, orange, and yellow.**

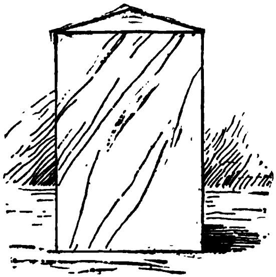
Piece of paper 1″ × 2″ of the three tones of red, orange and yellow; sheet of paper 6″ × 9″, mucilage and toothpick on each desk.

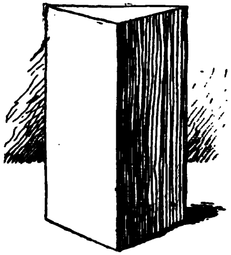
Let the children arrange the scales of red, orange, and yellow in good order on the sheet of paper. The normal tone should be at the bottom, the light tone next above, and the lighter tone at the top, see illustration, page 72. After the scales are arranged, let the children paste the lighter red oblong, in place; then the lighter orange, then the lighter yellow oblong, pasting each in turn — then the light tones of the scales — then the normal tone, working in the same order as before. They will thus work from top to bottom, and from left to right.

Let the children talk about their scales when they are pasted, telling what they mean by scales, etc.

Lesson 3. **Shall we draw another solid? Let us make the house that Jack built.**

Square and right-angled or equilateral triangular prism, paper, pencil or charcoal on each desk.





Let the children make a drawing of either the right-angled or equilateral triangular prism as it looks standing on a pile of books at the back of the desk. Let them draw first from the solid with a face toward them, then with an edge toward them.

Keep the thought of good observation and truthful representation before the pupils.

If preferred, the children can make a house of the square and triangular prisms and draw from this arrangement. Lead them to think of different houses they have heard or read about, — the house that Jack built, the house of Red Riding-Hood's grandmother. Let them *idealize* their house of solids and make the drawing to represent the houses named above.

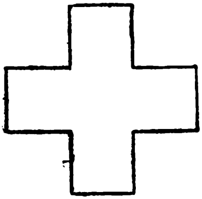
Lesson 4. **Let us talk about another historic figure. Where have you seen one like it?**

Five square tablets on each desk.

In the following notes on crosses, the teacher will find some material for such a story as will appeal to the children of this grade.

The Cross. — Crosses are found to have been among the earliest forms used in decoration. The cross was worshipped by the early Aryan nations, and the sacred symbol was placed upon their walls and pottery. It was one of the mystic symbols of Buddhism, and was used freely in decorating vases, etc. It is found frequently also in Egyptian inscriptions, where it is supposed to have symbolized future life. It was also sometimes called the key of the Nile. In Persia, as early as 850 B. C., a cross similar to the Greek cross was worn by the king as an act of worship to his God; and the cross and crescent were combined on Oriental standards many centuries before the Christian era.

The lesson is to be upon the the Greek cross. Show the children pictures of the Greek cross and tell the story of this cross in a way that will lead them to think of it in its decorative use. Let the children lay the cross with their tablets, or cut it from manila paper. Ask them to find this cross in wall decorations, borders, etc., — to bring articles decorated with this figure, or pictures showing its use.



Greek Cross.

Lesson 5. ***Options.***

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 157.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XVI.

SIXTEENTH WEEK.—FORM AND COLOR.

ELLIPSOID, OBJECTS.—TONES OF GREEN, BLUE, VIOLET.

OBSERVING AND CUTTING SHAPE. OBSERVING COLOR. SEEING AND DRAWING. DRAWING HISTORIC FIGURES.

Lesson 1. **What is the shape of the outline? The proportion?**

Sphere, ellipsoid, circles and ellipses, paper, scissors on each desk.

Let the children recall the outline of the sphere and the ellipsoid by movement on the solids. Let them compare the two shapes by means of the tablets, Fig. 1.* Let them think what shape easily cut will lead them to cut the circle correctly,—a square. Let them cut a square, *freehand*, and from it cut a circle by rounding off the corners.

Ask about the proportions of the ellipse. Let them study the ellipse, comparing it again with the circle, and think which of the proportions found the preceding week would apply to this shape. Let them think what simple figure would enable them to cut the ellipse readily. Let the children cut an oblong of the proportion 2 to 3, freehand, judging the proportion, and from it cut an ellipse by rounding off the corners.

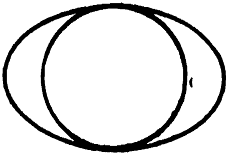


Fig. 1.

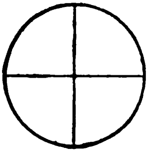


Fig. 2.

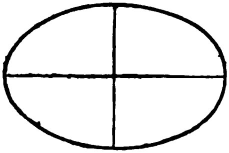


Fig. 3.

If preferred, both circle and ellipse may be cut freehand without the square and the oblong.

Lesson 2. **Let us make scales again. How do you like these colors?**

Several squares of normal, light, and lighter green, blue and violet paper, 5″ × 5″, on the teacher's desk.

Lead the children to observe the scales of green, blue and violet as

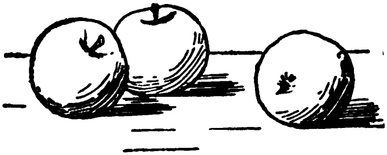
*** If they have no tablets, they may cut a circle and an ellipse from paper.**

they did those of red, orange and yellow in Chapter X, Lesson 4. Let them find the scales among the teacher's papers or lay them from their own supply of paper. Ask the children about the scales in a way to find whether they enjoy these colors as well as the brighter hues.

Lesson 3. **Who'll name my apple? Let us draw them very carefully.**

Apples or other spheric objects, paper, pencil or charcoal on each desk.

Let the children arrange groups of apples or other spheric objects on a pile of books at the back of the desk.



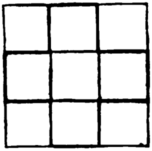
"Pass the apples, please, again, —
Russet, greening, snow, and pippin."

Let them think of some story they can tell with their objects, — then let them draw and name their pictures.

Lesson 4. **How can we draw the Greek cross? Let us learn how to trisect.**

Square of paper, 6″ × 6″, paper, pencil on each desk.

Let the children fold a square of paper so as to divide it into thirds by folding the nearer edge over until there is as much paper left beyond the edge as there is from the edge folded over to where the fold will be when creased. Let them crease the fold. Let them turn the paper around so the farther edge will be the nearer, and fold the nearer edge to the fold, crease, and unfold.



Let the children describe the parts into which the square is divided by the folds. Give the name ***trisect*** for dividing into three equal parts. Let them turn the paper half way around and fold again to *trisect.*

Ask the children to find different figures in the square they have folded. No doubt they will find the Greek cross. If they do not, recall the laying of the figure in the lesson on the cross given the preceding week. Let them think how they can draw a Greek cross; first a square must be drawn, then its farther and left edges trisected (pencil perpendicular to the edge to be trisected), then the vertical and horizontal lines drawn to place all the *arms* of the cross around the centre, then the outline of the cross must be strengthened by drawing broader lines around all the arms.

If any of the children have trisected very well, the teacher can erase the lines not needed to form the cross in their figures and keep their drawings to pin on the wall.

Lesson 5. Options.

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 175.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XVII.

SEVENTEENTH WEEK.—FORM AND COLOR.

OVOID, OBJECTS.—TONES OF GREEN, BLUE, VIOLET.

OBSERVING AND CUTTING SHAPES. CUTTING SCALES. SEEING AND DRAWING. OBSERVING HISTORIC FIGURES.

Lesson 1. **How do they differ in outline? Let us cut shapes again?** *Sphere, ellipsoid, ovoid, circles, ellipses,* 1 *to* 2 *and* 2 *to* 3, *and oval, paper, scissors on each desk.*

Let the children compare the outline of the three solids — one a circle, another an ellipse, another partly like the circle and partly like an ellipse. (This can be readily discovered by placing the oval tablet on the elliptic tablet of the proportion 1 to 2, and the circular tablet on the broad end of the oval tablet.)

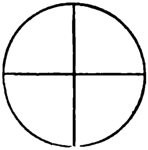


Fig. 1.

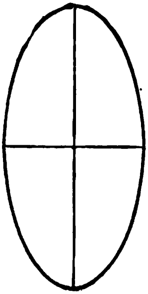


Fig. 2.

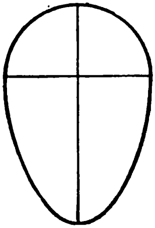
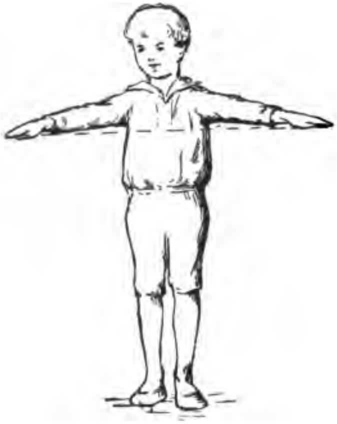


Fig. 3.

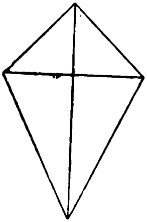
Let the children compare the ellipse of the proportion 2 to 3 and the oval and find that both are of the same proportion. Let them cut the oblong of the proportion 2 to 3 and from it cut the oval.

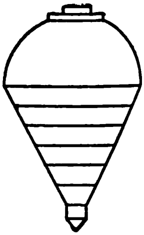
If preferred, the children may cut the shapes freehand without reference to the proportion. It is not intended that the children shall analyze the shapes to any extent in these exercises, but that they shall be led as far as possible in the comparison of shapes and also of proportions. It is not so much the *terms* as the things that need fixing.

In connection with the ovoid and the oval, the idea of ***symmetry*** may be developed. Symmetry belongs to an object considered as a whole, and is produced by a balance of parts. In the simplest form of symmetry, the balance is produced by parts which are exactly alike on each side of an imaginary line called the axis of symmetry. At this elementary stage, the word "balance," with which most children are familiar, may be used to illustrate the idea of symmetry.



Give the children such exercises as will lead them to think of the symmetry of their bodies. Let them speak of one arm balancing the other, etc. Let them think of the scales used to weigh articles in a store. Ask them why their sail-boats sometimes go over when they are sailing them on the pond. Ask them how a kite must be made in order to fly well; how a top must be in order to spin well. Let them draw a picture of a top and then draw a vertical line through the picture to show the part the top spins around. Keep the thought of the top's turning around on this central part or ***axis,*** and also the thought that while it turns it keeps its *balance.* Tell them this *axis* around which the top keeps its balance is the ***axis of symmetry.*** Let them draw the kite and find its *axis of symmetry.* Let them find the axis of symmetry in people, in figures in the wall paper, etc. Let them fold the four ***axes of symmetry*** in a square. Let them fold the two *axes of symmetry* in an oblong and an ellipse. Let the fold the axis of symmetry in the oval. Let them fold an oblong on its long axis and cut the kite shape, — open it and see the axis of symmetry.



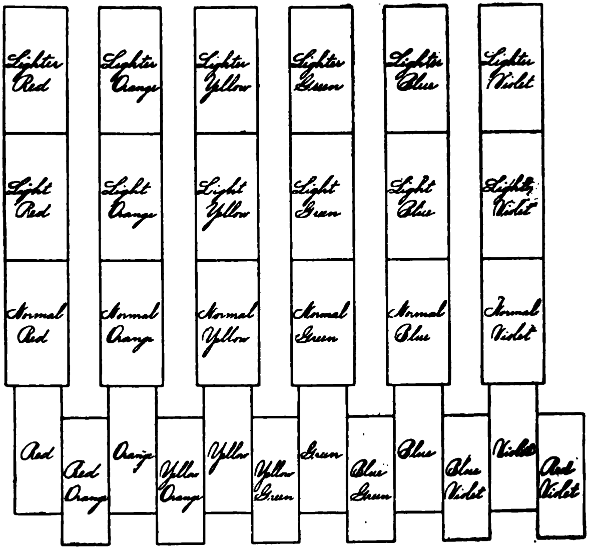


Lesson 2. **Let us see how carefully we can cut. What scales shall we try?**

Box of color tablets, mounting board, normal, light, and lighter tones of green, blue, and violet on each desk.

If the children have the regular supply of paper for the second half year, Assortment BB,* the exercise may be as follows: —

Let the children lay scales by hue and by tone, as directed in Lesson 2, pages 77, 78, laying the blue, green and violet scales by tone. The illustration shows the order in which all the scales should be laid. The lower line shows the color unit tablets laid in the order of the color unit, but having the red, orange, yellow, green, blue, and violet slipped up a little way. The color scales are to be made from the scaling material found in the Assortment.



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* See The Prang Course in color: The Prang Educational Company.

If the children do not have the colored paper, **Assortment BB**, the following exercise may be given.

One 4" × 4" square of normal, light and lighter blue, green and violet paper to each group of eight children ; scissors on each desk.

Distribute the paper for cutting the scales of green, blue and violet as in Lesson 2, page —. Let the children cut the scales as directed in the lesson referred to above.

Lesson 3. **Could you tell a story with your pencils?**

Objects like the ellipsoid or ovoid, paper, pencil or charcoal on each desk.

Let the children arrange a group of objects like the ellipsoid or ovoid on the back of the desk. Let them study the arrangement of the group in a childlike way. Tell them that perhaps the group would look better if some of the objects were placed a little differently, and that they may try it.

Lead them to think of the group as representing a story, and to picture it in a pleasing way, keeping the story and the picture well associated in the mind.

Quite at their ease on a shelf they sat,
For far away was the pussy-cat;
The cheese was good; and the night was fine,
And Puss was away till the clock should strike nine.

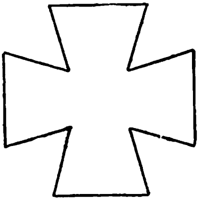
How did they know Puss was taking the air,
'Til that time of night, in a neighboring square?
Have n't you heard that the walls have ears?
And these are the mouse's, my pretty dears!

Lesson 4. **What shall we study to-day? Let us hunt in a book for the picture.**

Pictures of Maltese crosses on the teacher's desk.

"The Maltese cross was borne by the Knights of Malta, as heirs of the Knights Hospitallers of St. John of Jerusalem, as the distinctive mark of their order."

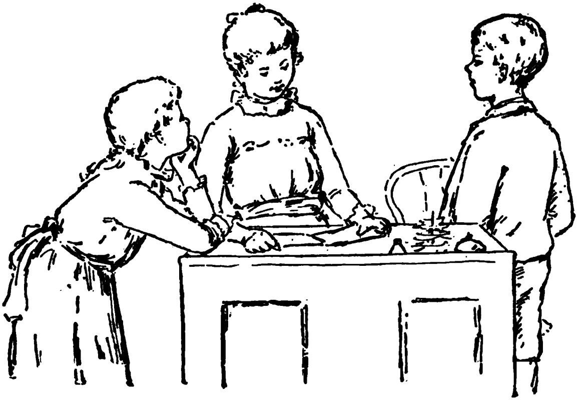
Show the children pictures of the Maltese cross and tell them its story. Ask them where they have seen this figure and for what it was used. Encourage the children to look for pictures of the Maltese cross in books and elsewhere. Ask them to bring pictures of this cross to school.



Maltese Cross.

Lesson 5. ***Options.***

- (*a.*) ***Expression in nature study.*** *See Appendix I., page* 158.
- (*b.*) ***Other illustrative drawing.*** *See Appendix II.*
- (*c.*) ***Review of the week's work.***



CHAPTER XVIII.

EIGHTEENTH WEEK.—FORM AND COLOR.

EQUILATERAL TRIANGULAR PRISM, OBJECTS.—TONES OF GREEN, BLUE, VIOLET.

OBSERVING SHAPE. PASTING SCALES. SEEING AND DRAWING. DRAWING HISTORIC FIGURES.

Lesson 1. **Can you fold carefully? Let us cut another figure.**

Equi. tri. prism, paper on each desk.

Take a square of paper and fold a vertical diameter, the children watching you, Fig. 1. Unfold, and fold the lower left corner up to meet the diameter of the square, and mark the point on the diameter where the corner touches, Fig. 2. Unfold, and fold the lower right corner up in the same way, Fig. 3. From each lower corner make a fold to the point marked, thus obtaining an equilateral triangle, Fig. 4, with its axes of symmetry. Let the children fold in the same way.

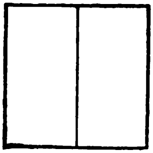


Fig. 1.

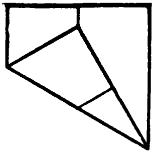


Fig. 2.

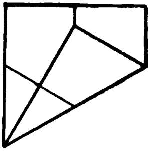


Fig. 3.

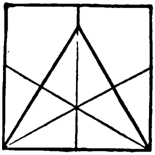


Fig. 4.

Let the children take another square of paper and cut an equilateral triangle without folding or using other guides. When the triangle is cut, let them fold it to find whether it has all its sides equal — that is, whether it is *equilateral.* Write *equilateral triangle* on the board and let the children pronounce the words, showing what is meant by the term.

Lesson 2. **Who remembers how to arrange and paste the scales?**

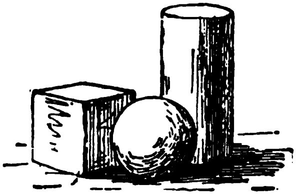
One oblong, 1″ × 2″, *of normal, light, and lighter green, blue, and violet paper; sheet of paper,* 6″ × 9″, *mucilage, and toothpick on each desk.*

Let the children paste the scales of green, blue, and violet, arranging the tones in the same order as that given for the scales of red, orange, and yellow. The scales should be arranged in the order of the ideal color unit, — green at the left of the sheet, blue in the centre, and violet at the right of the sheet.

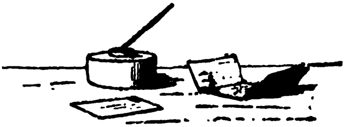
Lesson 3. **Which have you chosen? Let us show how well we can see.**

Objects resembling two or more of the six solids and the solids which the objects resemble on each desk. Several objects and solids resembling them on the teacher's desk.

Let the children compare the solids with the objects resembling them, as to surface, faces, etc. Let them group the solids or the objects and draw pictures of the groups. If the children have grown to observe light, shade, and shadow, let them attempt to express it, but do not influence them to do so, or suggest ways of showing the shade and shadow.



Draw a picture like the one given at the right on the board *before the class* and ask them to tell you the story it contains. Write the story on the board.



The letter might contain the following : —

Dearest Mamma : —
A letter I send,
And I do hope you 'll read it,
Quite to the end.

'T is all about how
We 're learning to *see*,
And a picture I 'll make you,
Showing how three

Objects would look
If put in a *group*
On the back of my desk;
I 'll call it a troop

Of children so glad
They 're learning to draw;
Are n't they the happiest ones
You ever saw?

Lesson 4. **How many historic figures have we drawn? Let us draw another.**

Square of paper, 6″ × 6″, paper, pencil on each desk. Pictures of Maltese crosses on the teacher's desk.

Recall the lesson on the Maltese cross, and ask how many children have found pictures of it; show pictures of the cross and ask the children how it can be drawn. Ask them to follow directions given very carefully and see what they will have when they have finished. Dictate as follows: —

Fold the *diameters* of the squares on your desks (Lesson 4, page 79). Unfold. Place the paper with a corner toward you. Fold the nearer corner to the farther corner. Crease. Unfold. Turn the paper half way around. Fold the nearer corner to the farther corner. Crease.

Unfold. Place the square with a side toward you. Show the diameters of the square. What other folds do you find? How do they run across the paper? (*From corner to corner.*) These folds from corner to corner show the ***diagonals*** of the square. If there is time, let the children fold the diameters and diagonals of an oblong, Fig. 2.

Let the children draw a square about four inches side on their sheet of paper. Let them bisect the left and upper sides, and then draw the diameters of the square. Let them draw the diagonals of the square, Fig. 1. Ask them to notice how the diagonals and diameters divide each other into halves or ***semi-diameters*** and ***semi-diagonals***. Ask them to trisect the *semi-diagonals* — to bisect each *half side* of the square made by the diameters. Let them draw lines from these bisection marks to the inner trisection marks, as shown in Fig. 3, and so produce the Maltese cross. Ask how many can name the figure they have drawn.

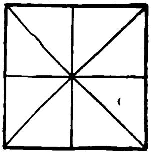


Fig. 1.

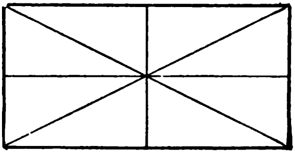


Fig. 2.

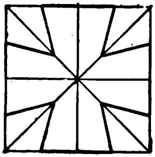


Fig. 3.

Lesson 5. ***Options.***

- (*a.*) ***Expression in nature study.*** *See Appendix I., page* 179.
- (*b.*) ***Other illustrative drawing.*** *See Appendix II.*
- (*c.*) ***Review of the week's work.***

CHAPTER XIX.

NINETEENTH WEEK.—FORM AND COLOR.

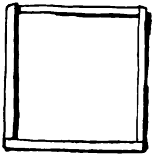
CUBE, HEMISPHERE.—COLOR, RED.

FOLDING, CUTTING, AND PASTING. SEEING AND DRAWING. OBSERVATION OF HISTORIC FIGURE.

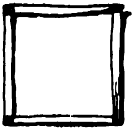
Lesson 1. **Let us get ready to sew. Can you fold neatly?**

Two squares of paper, 6″ × 6″, *on each desk.*

Ask how many of the children have sewed—how many have ever sewed an overseam. Let them place a square of paper on the desk with an edge toward them and then ask them to think how much an inch is—a quarter of an inch. Ask them to fold the nearer edge of the square of paper over a quarter of an inch, and then crease the fold. Let them turn the paper so another edge of the paper will be next them and fold as before. Repeat with the remaining edges. Tell them this is folding for an ***overseam.***



Let the children fold the second square as the first was folded. Ask them to see how their handkerchiefs are finished on the edge. Show them how to turn the part of the paper already folded, over on to the body of the square (without unfolding) and let them crease hems on the four sides of the square. The hem is to be one fourth of an inch wide. Give the term—***quarter-inch hem.***



Lesson 2. **Can you plan carefully? Let us make a border.**

One or two tones of red paper (*as the supply will allow*); *scissors, mucilage, toothpick, sheet of paper*, 6″ × 9″, *on each desk.*

Let the children cut marginal strips, ellipses and circles, or ellipses of the *light* tone of red (if two tones, light and lighter, are provided), to make a border. Let them cut the strip for the background the full width of the border, and of the *lighter* tone of red. Let them arrange

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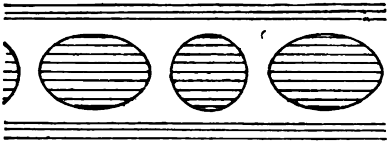
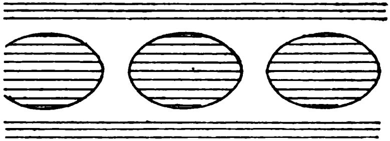
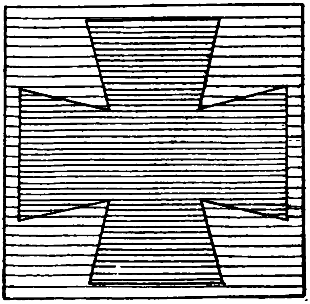
* Two tones of red, light, and lighter, will be found in the colored paper, Assortment B.





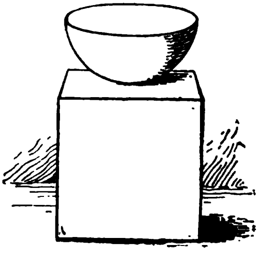
their units and marginal strips, on the background, paste them and mount the border on the sheet of 6″ x 9″ paper.



If preferred, the children may cut and paste a Maltese cross. In cutting the cross, the figure should be lightly drawn on the back of the paper (see Chapter XVIII, Lesson 4, page —, for directions for drawing), and then cut out; or a pattern may be drawn and cut and the children may trace around this on the back of the colored paper, and cut out the figure by the tracing. The cross should be about four inches in diameter. The children may mount the cross on a background of a lighter tone somewhat larger than the figure, and mount the whole on the 6″ x 9″ sheet.

Lesson 3. **Can you show in your picture how they are placed?**

Cube, hemisphere, paper, pencil or charcoal on each desk.

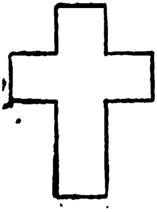


Let the children place the cube facing on the pile of books at the back of the desk. Let them place the hemisphere with the plane face up on top of the cube. Keep the spirit of the work as shown in the preceding lessons in "Seeing and Drawing."

Lead the children to think of the picture that they are making and of the truthfulness of the picture. Let them hold back their work and compare it with the appearance of the models.

Lesson 4. **Let us study a figure you all know. Who can tell me about it?**

Six square tablets on each desk. Pictures of the Latin cross on the teacher's desk.



Latin Cross.

This cross, the symbol of the Christian faith, will appeal at once to the children because of familiarity or association. Show pictures of the cross — as beautiful ones as can be obtained — and let the children talk about them. Let them lay the Latin cross with their tablets. Ask them to look for the cross as they go about the streets, and also to look for it in books. Ask the children to bring pictures of the Latin cross.

Lesson 5. Options.

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 180.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XX.

TWENTIETH WEEK.—FORM AND COLOR.

CUBE, HEMISPHERE.—COLOR, RED.

FOLDING. GROUPING. SEEING AND DRAWING. COLOR—SCALES.

Lesson 1. **What are tucks for? Let us learn how to make them**

Square of paper, 6″ × 6″, *on each desk.*

Dictate the following: Place the square of paper with an edge toward you. Fold about an inch of the paper over. Crease the fold.

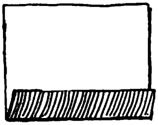


Fig. 1.

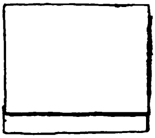


Fig. 2.

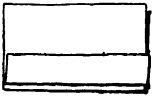


Fig. 3.

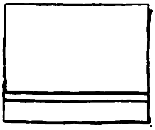


Fig. 4.

(Fig. 1.) Turn the paper around so that the farther edge will be the nearer. Turn the paper over from left to right. Fold the body of the square back to within a quarter of an inch of the first fold. Crease the fold. (Fig. 2.) Fold the nearer part of the paper over a little more than a quarter of an inch beyond the fold that shows on the part folded over. Crease the fold. (Fig. 3.) Turn the paper *around.* Turn the paper over from left to right. Fold the body of the square back a quarter of an inch beyond the last fold. Crease the fold. (Fig. 4.) Repeat the folding as many times as the square of paper will allow. Ask the children to tell what they have been making—***quarter-inch tucks.***

Lesson 2. **What color would you use for a quatrefoil?**

One or two tones of orange paper, scissors, mucilage, tooth-pick, sheet of paper, 6″ *x* 9″, *on each desk.*

Let the children draw and cut a quatrefoil, Fig. 1, or an eight pointed star, Fig. 2, from one of the tones of orange paper (if two tones are given). Let them mount the quatrefoil or star on a circular or a square background, a little larger than the figure, of the other tone of orange paper and then mount the whole on the centre of the sheet of paper provided. Or the children may cut and paste a border of four-pointed stars.

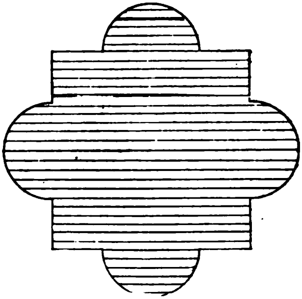


Fig. 1.

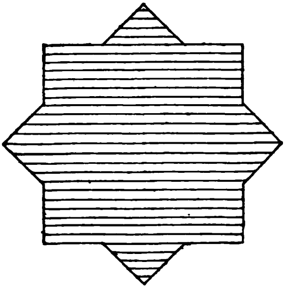
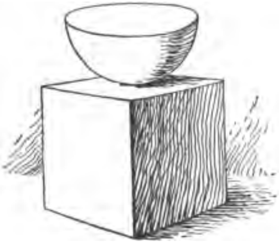


Fig. 2.

Lesson 3. **Place them another way. Of what do they make you think?**

Cube, hemisphere, paper, pencil or charcoal on each desk.

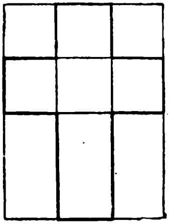


Let the children place the cube with an edge toward them and upon it the hemisphere with the plane face up. Let them draw the solids as they look.

Encourage the children to think of objects which might be found placed as the solids are. Children find many stories in this arrangement of solids.

Lesson 4. **Let us draw the Latin cross. How many have found one?**

Six square tablets, paper, pencil on each desk. Pictures of Latin cross on the teacher's desk.



Ask the children about finding Latin crossses and let them show such pictures as they have brought. Let them lay the cross with their tablets. Ask them how they can draw the cross — how many squares long and how many squares wide it is — what its *proportion* is. Let them draw an oblong, 3 to 4, trisect the shorter side and divide the longer side into four equal parts — that is, ***quadrisect*** it — draw lines from the marks of division and strengthen the outline of the cross.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 175.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work,***

If preferred, a lesson may be given on Washington as a boy. Encourage the children to find out about Washington and lead them to admire his good traits of character. Ask them to make a picture showing how Washington looked in some of the stories told.

CHAPTER XXI.

TWENTY-FIRST WEEK.—FORM AND COLOR.

SQUARE PRISM, ELLIPSOID.—COLOR, YELLOW.

FOLDING, CUTTING, AND PASTING. SEEING AND DRAWING. OBSERVING HISTORIC FIGURE.

Lesson 1. **Can you see a bias band in any one's dress? Fold neatly.**

Square of paper, 6" × 6", *scissors on each desk.*

Dictate the following steps: Fold both diagonals of a square. Unfold. (Fig. 1.) Place the square with a corner toward you. Fold the nearer corner to the centre. Crease. (Fig. 2.) Unfold.

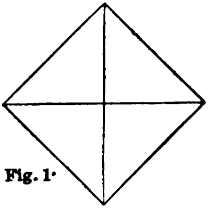


Fig. 1.

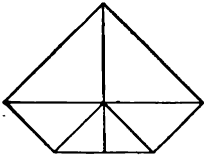


Fig. 2.

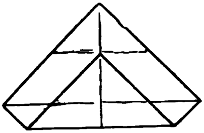


Fig. 3.

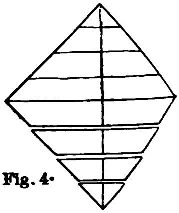


Fig. 4.

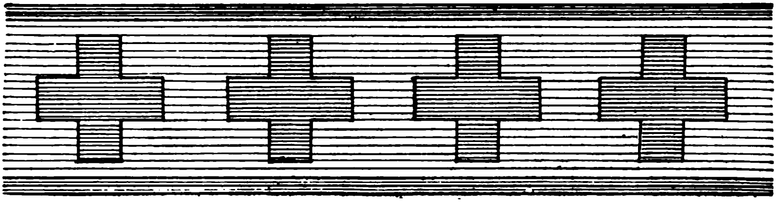
Turn the paper around so that the farther corner will be the nearer. Repeat the last folding. Fold the nearer corner to the centre of the farther fold. Crease. (Fig. 3.) Unfold. Turn the paper *around* and repeat the last folding. Fold the nearer corner to the nearest fold. Crease. Unfold. Turn the paper *around*, and repeat the last folding.

Let the children cut these folds, Fig. 4. Give the name of the strips cut — ***bias bands.*** Ask the children what *bias bands* are used for. Let them find them on their clothing.

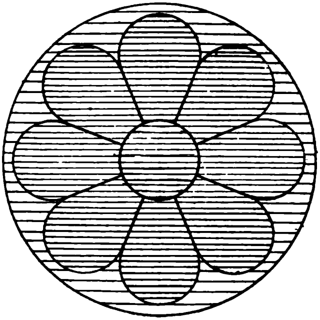
Lesson 2. **Who remembers the Maltese cross? Let us arrange crosses for a border.**

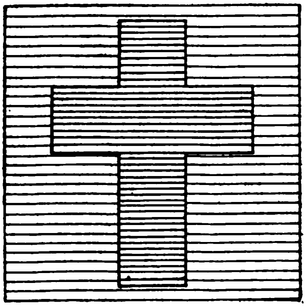
One or two tones of yellow paper, pencil, scissors, mucilage, toothpick, sheet of paper, 6" × 9", *on each desk.*

Recall the drawing of the Greek and Maltese crosses. Ask the children how these could be arranged to make a border. Lead and direct the children so as to enable them to make a border like that given below, or one in which Maltese crosses take the place of the Greck crosses.



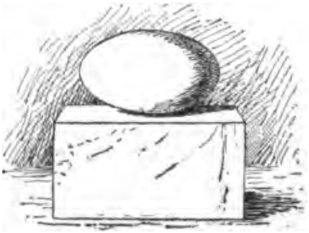
If preferred, the children may cut and paste a rosette like the one given below or a Latin cross.





Lesson 3. **How can we group them? Draw thoughtfully.**

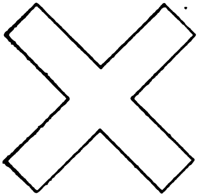
Square prism, ellipsoid, paper, pencil or charcoal on each desk.



Let the children arrange the models as in previous lessons in combining solids. Lead them to think of the picture that the solids will make and to try to obtain a pleasing effect. Let the children draw thoughtfully the solids as they look, and hold the drawings back to compare them with the solids.

Lesson 4. **Here is another historic figure. Where have you seen it?**

Pictures of St. Andrew's cross on the teacher's desk.



St. Andrew's Cross.

Talk with the children about the St. Andrew's cross. Interest them in looking for it in books or in stone carvings on buildings, etc. Let them think how this figure might be used in borders, etc. Talk with them about drawing the figure and ask them how it might best be done.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 180.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

If preferred, a story may be told about Washington as a soldier. Show the children pictures and encourage them in finding stories about Washington. Ask them to show Washington as a soldier by drawing a picture.

CHAPTER XXII.

TWENTY-SECOND WEEK.—FORM AND COLOR.

CUBE, SQUARE AND TRIANGULAR PRISMS. COLOR, GREEN.

OBSERVING CORNERS. CUTTING AND PASTING. SEEING AND DRAWING. DRAWING HISTORIC FIGURE.

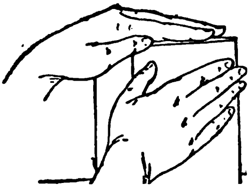
Lesson 1. **What can you tell about corners? Let us name an angle.**

Cube, square and triangular prisms, square, triangle, and oblong on each desk.

Let the children observe the solids and find all the kinds of corners they can.

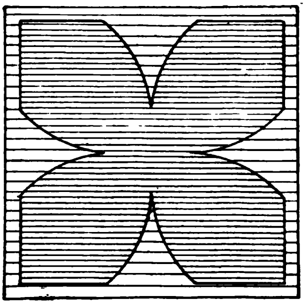
Lead the children to distinguish between the different corners and to name ***outside corners, inside corners*** and ***face corners.*** The cube and prisms have only outside corners. A room or a box has inside corners. A ***face*** corner is formed by the meeting of two edges.

Ask the children to place the square prism as shown in the illustration. Ask them to show two faces *perpendicular to each other*, and to show how these faces come together *squarely*—at a ***square corner.*** Ask them to find other faces perpendicular to each other and coming together at a *square corner.* Ask them to find edges of the cube and prisms perpendicular to each other making a square corner, a square face corner; to take a square tablet and find edges perpendicular to each other making a square face corner. Let them find outside and inside corners that are square. Let them represent the square face corner with sticks. Let them move the sticks a little apart, still keeping the sticks perpendicular to each other. Give the name ***right angle*** to each arrangement. Tell them that when faces, edges, sticks, lines are perpendicular to each other, these faces, edges, sticks, lines make a ***right angle.*** Ask them to find right angles anywhere in the room.



Write *outside corner, inside corner, face corner, square corner, right angle* on the board and ask the children to read the terms and show what they mean.

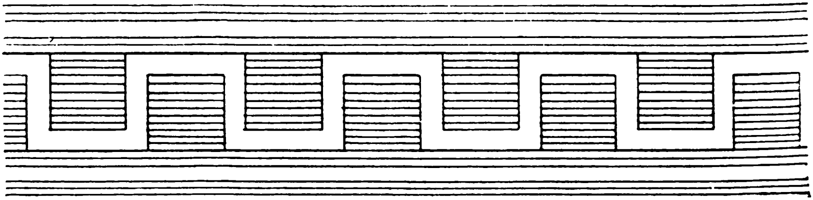
Lesson 2. **Let us make another decorative figure with careful fingers.**



One or two tones of green paper, scissors, mucilage, tooth-pick, two sheets of paper, 6" × 9", on each desk.

Let the children draw the figure given below on one ofthe sheets of paper, and then cut the figure out for a pattern. Let them trace around the pattern on the back of the darker sheet of green paper, cut out the figure, and mount it on a square of the lighter tone of green paper. This square should be a little larger than the figure.

Or, the children may make the border given below, — a Greek fret.



Lesson 3. **What story shall we illustrate? Think — then name.**

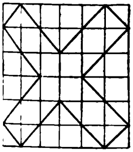
Objects like a sphere, cylinder and hemisphere on each desk.

By this time there should be quite a collection of pleasing objects in the schoolroom. Let the children make groups of objects and draw them, naming the picture.

Lesson 4. **Can you bisect and trisect? Hold the pencil right.**

Paper, pencil on each desk. Pictures of St. Andrew's cross on the teacher's desk.

Recall the lesson on the St. Andrew's cross and ask how many have anything to tell about it. Give the children directions for drawing the cross.



The St. Andrew's cross is obtained by dividing the square into thirty-six small squares by bisecting and trisecting, drawing the diagonal of each corner square, and drawing the lines to complete the cross as shown in the illustration.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 158.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

If preferred, talk with the children about Washington as a President. Encourage them to show how he looked in some of the stories told.

CHAPTER XXIII.

TWENTY-THIRD WEEK.—FORM AND COLOR.

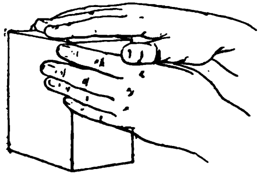
CUBE, SQUARE AND TRIANGULAR PRISMS.—COLOR, BLUE.

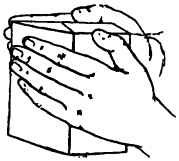
OBSERVING CORNERS.—CUTTING AND PASTING.—SEEING AND DRAWING.—OBSERVING HISTORIC FIGURE.

Lesson 1. **Find another kind of corner. What shall we name it?**

Square, right-angled triangular, and equilateral triangular prisms; squares, right-angled and equilateral triangles on each desk.

Let the children place the square and right-angled triangular prisms as shown in the illustrations. Ask them to place the hands so as to show the faces that meet at a right angle, Fig. 1. Ask them to place the hands on the left and right faces of the square prism and then to move them forward on the triangular prism, to see how the faces of that solid meet—at a ***sharp corner.*** Let the children find other *sharp corners* in the solids and in the tablets—outside, inside, and face corners may be sharp as well as square.





Let the children lay sticks to represent a sharp corner, then move the sticks apart a little, keeping the same direction. Give the same ***acute angle*** to each arrangement. Let them draw *acute angles* with and without the lines meeting. Let them find acute angles about the room.

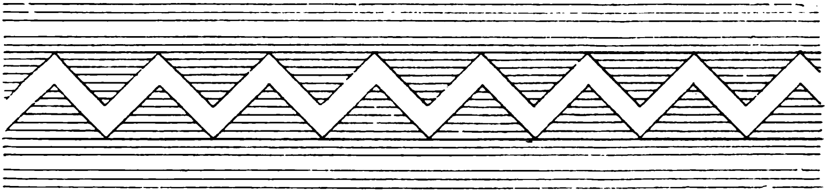
Let the children look at the square and find its angles—all right angles. Ask them to examine the two triangles—one with a single right angle, the ***right-angled triangle,*** the other with no right angles but all its sides equal, the *equal sided* or *equilateral triangle.*

Write *sharp corner, acute angle, right-angled triangle, equilateral triangle* on the board, and ask the children to read the terms and to show what is meant by them.

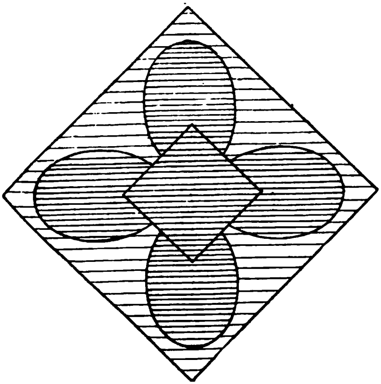
Lesson 2. **Let us make new figures to-day. Where are borders used?**

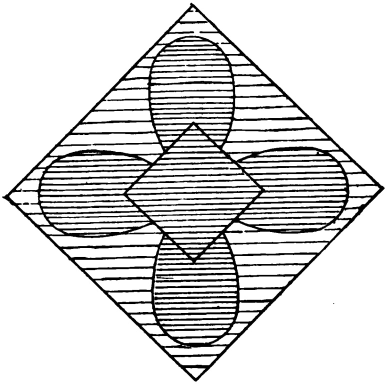
One or two tones of blue paper, scissors, mucilage, tooth-pick, sheet of paper, 6″ × 9″, on each desk.

Let the children cut and paste a border of triangles like that given below. If they have two tones of paper, let them make the repeats and the marginal lines of one tone of blue and the background of another tone. This border, it will be seen, produces the historic ornament known as the zigzag.



If preferred, either of the ornaments given below may be made instead of the border.



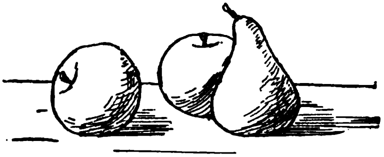


Let the children mount the work, whether it is a border or an arrangement around a centre, on the manila paper.

Lesson 3. **See where the sun kissed them! Can you show how beautifully they are rounded?**

Three or more apples, pears, etc., paper, pencil or charcoal on each desk.

Let the children make a group of fruit and then draw the picture.



"Glowing with the prisoned beams
Of summery suns, and rounded to completeness
By kisses of the south wind and the dew."

Lead the children to think of the beautiful form and color of the fruit, and to think how they can show this in the picture.

Lesson 4. **Let us study one more historic figure. Have you seen a trefoil?**

Three small semicircles and one equilateral triangle, sheet of paper, 6″ × 9″, on each desk. Pictures of trefoils on the teacher's desk.

"A trefoil is an ornamental feathering or foliation used in medieval Pointed architecture in the heads of window-lights, tracery, panelings, etc., in which the spaces between the cusps represent a three-lobed figure."—*Century Dictionary.*

"A system of ornament in vogue in the Gothic style, which consisted of three foils or portions of a circle."—*Adeline's Art Dictionary.*

Show the children pictures of trefoils and ask them to make the figure with their tablets, using either circles or semicircles and an equilateral triangle. If they wish, let them cut a trefoil from paper. For this, let the children cut a six-inch square from manila paper and then let them fold and cut an equilateral triangle, as on page 92. Let them fold the equilateral triangle on an axis of symmetry to obtain Fig. 1, and fold

Fig. 1 twice on the other axis of symmetry until Fig. 1 is obtained the second time. Then show them how to draw the line as in Fig. 2. Let them cut the folded triangle on the line just drawn and then unfold, showing Fig. 3, the trefoil.

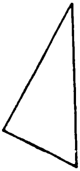


Fig. 1.

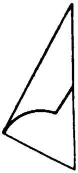


Fig. 2.

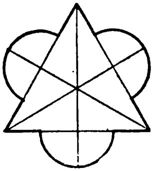
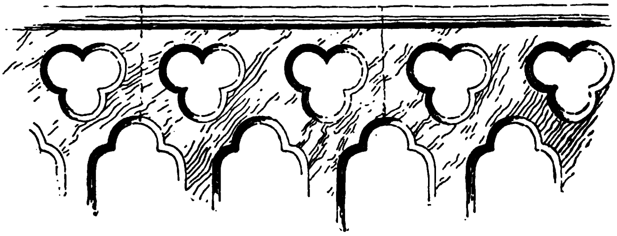


Fig. 3.

Ask them to look at buildings on their way home, to see if they can find ***trefoils.*** Ask them to find *trefoils* in pictures of churches at home.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 159.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***



CHAPTER XXIV.

TWENTY-FOURTH WEEK.—FORM AND COLOR.

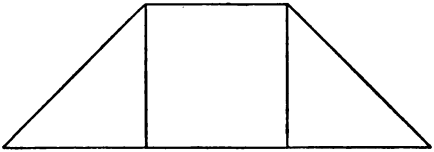
CUBE, SQUARE AND TRIANGULAR PRISM. COLOR, VIOLET.

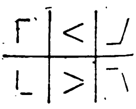
OBSERVING CORNERS. CUTTING AND PASTING. SEEING AND DRAWING. DRAWING HISTORIC FIGURE.

Lesson 1. **Let us find all the kinds of corners. What shall we name the last?**

Square and triangular prisms; squares, right-angled and equilateral triangles on each desk.

Let the children place the square and right-angled triangular prisms as shown in Lesson 1, page 108. Let them find where faces come together at a square corner or right angle and where they come together at a sharp corner or acute angle. Let them find where faces come together at a corner that is neither square nor sharp but blunt,—a ***blunt corner.*** Let the children put tablets together to make a blunt corner. Refer to Chapters XXII. and XXIII., Lesson 1, and develop ***obtuse angle*** from blunt corner. Ask them to find square corners, sharp corners, blunt corners, right angles, acute angles, and obtuse angles in the solids and tablets and around the room. Remember that square, sharp, and blunt corners may be either outside, inside, or face corners.





Write blunt corner, *obtuse angle*, on the board and ask the children to read the term and show what is meant by it.

Lesson 2. **How many colors have you used? Let us use one more.**

One or two tones of violet paper, scissors, mucilage, toothpick, two sheets of paper, 6'' × 9'', on each desk.

Let the children make a pattern as in Lesson 4, page 110, and cut a trefoil from the lighter tone of violet. Let them mount this trefoil on a triangular or a circular background, a little larger than the trefoil. A figure like the one shown in Fig. 1 may be cut instead of the trefoil.

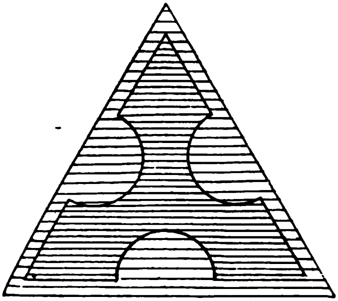


Fig. 1.

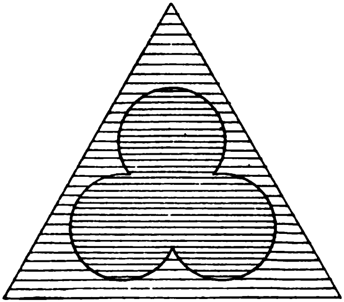
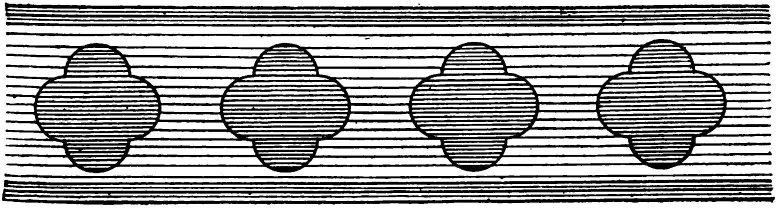


Fig. 2.

Or, the children may cut and paste a border of quatrefoils or of crosses.



Lesson 3. **Can you draw them well? Let us play they are for a fair.**

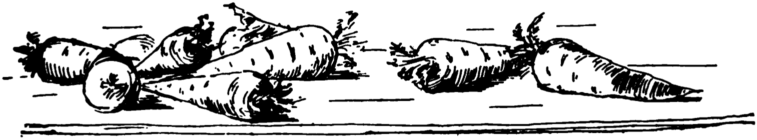
Three or more vegetables, paper, pencil or charcoal on each desk.

It is hoped that the teacher will have interested the children in these "everyday" objects in a previous lesson, and that the children have

brought some fine vegetables for their lesson. Ask who ever went to a fair where people brought the best of their fruit and vegetables to show how well their farms were kept, and what good crops they raised and where they tried to arrange their produce in a very attractive way, so that everybody would look at it.

> "Beneath, the turnip lay concealed in many a verdant fold."

Ask the children to arrange their vegetables in the most pleasing way they can think of and then to make a picture of the group.



"It was the pleasant harvest time,
When cellar-bins are closely stowed,
And garrets bend beneath their load."

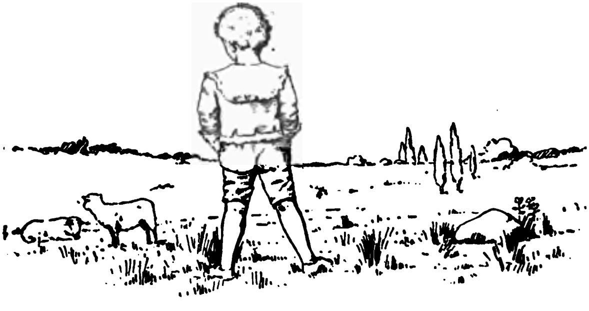
Lesson 4. **Let us draw the trefoil.**

One equilateral triangle and three small semicircles; three sheets of paper, 6″ × 9″, pencil on each desk. Pictures of the trefoil on the teacher's desk.

Show the children pictures of the trefoil and ask them to make the figure with their tablets. Ask them how it can be carefully drawn. Ask them to fold the trefoil as in Lesson 4, page 110. Let them draw a trefoil from this folding, noting the axes of symmetry.

Lesson 5. **Options.**

- (*a.*) ***Expression in nature study.*** *See Appendix I., page* 180.
- (*b.*) ***Other illustrative drawing.*** *See Appendix II.*
- (*c.*) ***Review of the week's work.***



CHAPTER XXV.

TWENTY-FIFTH WEEK.—FORM.

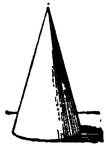
CUBE, CYLINDER, HEMISPHERE, CONE, OBJECTS.

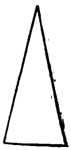
OBSERVING FORM. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **What shall we call it? Name something like it.**

Cone and objects resembling it, isosceles triangles and circles on each desk.

Present familiar objects resembling the cone with the model, and develop the concept of the ideal form — the ***cone.*** Lead the children to observe the action, the surface, the faces — rounding and plane, and the edge. Speak of the part of the cone on which it stands — the ***base;*** the point which is *opposite the base* — the ***vertex.*** Let the children find the *base* and the *vertex* of objects resembling the cone. Let them draw the outline of the cone and name its shape — a *triangle.* Let them find this shape among the tablets or cut it from manila paper. Let them find the part of the triangle which represents the *base* of the cone — the *vertex* of the cone. Tell them the part on which the triangle seems to rest is also called its *base,* and the point opposite the *vertex.* Write on the board *cone, base, vertex; triangle, base, vertex,* and let the children pronounce the words and show by handling the solids, etc., what each term means.





Lesson 2. **Show me what deft fingers you have. Let us model again.**

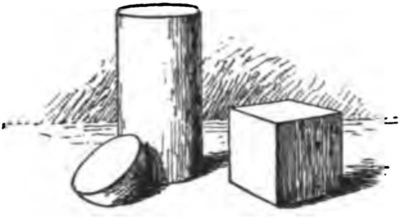
Cone and object resembling it, clay on each desk.

Let the children model a cone. When they have represented the form sufficiently well, let them model an object resembling the cone.

If preferred, the children may bisect the cone instead of modeling an object resembling it.

Lesson 3. **How shall we group them? Draw what you see.**

Cube, cylinder, and hemisphere, paper, pencil or charcoal on each desk.

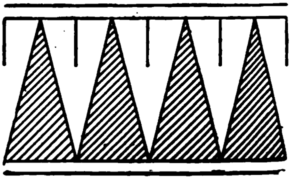


Let the children study the three solids to see how great a variety of *pleasing* groups can be made from them. They are gaining new material in these studies in order that they may make better pictures later, and are also making a good study of form. Let the children draw the groups they have made.

Lesson 4. **Let us arrange the new tablets to make a pleasing border.**

Five isosceles triangles, strips of brown paper, 9″ × ¼″, *on each desk.*

Let the children arrange a border with the tablets, using the strips for marginal lines. Let them draw this border on the board.



Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* **166.**
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XXVI.

TWENTY-SIXTH WEEK.—FORM.

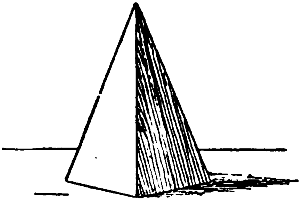
HEMISPHERE, SQUARE PRISM, ELLIPSOID, SQUARE PYRAMID, OBJECTS.

OBSERVING FORM. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **Where have you seen something like it? Tell all about it.**

Square pyramid and objects resembling it, squares and isosceles triangles on each desk.

Present familiar objects resembling the square pyramid with the model and develop the concept of the ***square pyramid,*** as the cone is developed in the preceding chapter.



Write *square pyramid*, *base*, *vertex* on the board, and let the children pronounce the names and show what each term means.

Lesson 2. **How shall we model it? Be sure the proportion is right.**

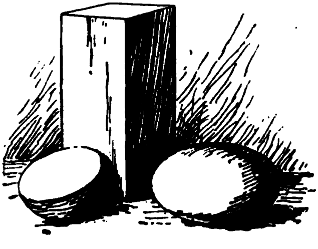
Square pyramid and objects resembling it, clay on each desk.

Let the children model a square pyramid. When this is done, let them model an object resembling it.

If preferred, the following exercise may be given.

Let half of the class bisect the pyramid so as to divide the base on a diameter, and the remainder so as to divide the base on a diagonal. Let the children compare the shapes of the surfaces made by bisecting.

Lesson 3. **Let us get more material for pictures. Of what do they remind you?**

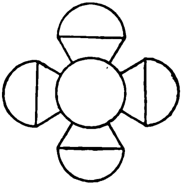


Hemisphere, square prism, ellipsoid on each desk.

Let the children try to make as many pleasing *pictures* with their solids as possible. Let them draw the groups and then hold the pictures back to criticise them. Keep up the thought of studying these forms carefully so as to be able to make better pictures in the future.

Lesson 4. **How shall we arrange them? Make a strong centre.**

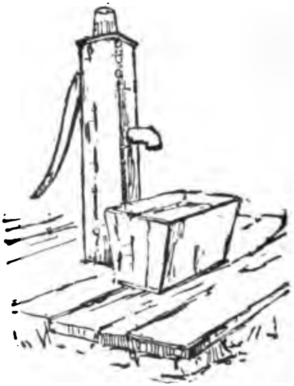
Four each of semicircles and equilateral triangles, one circle, and one square on each desk.



Let the children make an arrangement around a centre with their tablets. Ask them to remember their early work in laying rosettes with tablets and to be sure the centre will hold the repeats together. Let them draw the arrangement on the board, trying to get free ready movement in drawing.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* **166.**
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***



CHAPTER XXVII.

TWENTY-SEVENTH WEEK.—FORM.

SPHERE, OVOID, EQUILATERAL TRIANGULAR PRISM, VASE.

OBSERVING FORM. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **What a beautiful form! Can you find others as good?**

Vase form on each desk. . Vases on teacher's desk.

Present simple vases of good form with the vase form. Lead the children to an appreciation of the ideal form — the ***vase.*** Ask them to observe the action, surface, faces, etc., and to tell about what they find. Give the term *rounding* for the face that is not plane.

The Spirit of the Lesson. — Try to make every exercise a means of promoting the mental development of the children; incite them to observe, to discover, to express. But try also to make every exercise in some way a stepping-stone to the elevation of the spiritual nature. Lead the imagination out by the suggestion of pleasant and beautiful thoughts, — by word-pictures, by poetry. The cadence and rhythm of verse add to the grace and beauty of the thought. Affected by these, the expression by drawing will become elevated. It will not be mechanical reproduction, but will become thought expression.

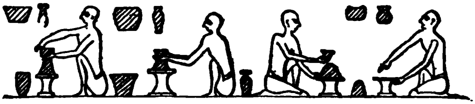
Longfellow wrote a beautiful poem called "Keramos," the first part of which is quoted below: —

"Turn, turn, my wheel. Turn round and round,
Without a pause, without a sound:
    So spins the flying world away.
This clay, well mixed with marl and sand,
Follows the motion of my hand;
For some must follow, and some command,
    Though all are made of clay."

The statements given below about the origin of vases will aid the teacher in bringing this work nearer to the pupils.

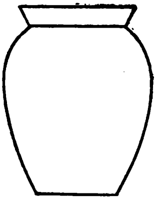
Vases. — The first rude attempts at pottery were doubtless in the form of bowls, the only thought being to provide a receptacle; later came the idea of beauty. The eye studied proportion and curvature and effect as a whole, and demanded the production of more and more subtile outlines, easy and delightful to follow but hard to analyze, until the vase form came to be one of the most complete modes of expression of the attainments of a people, and to hold within itself some of the highest art ideals of the people. By a careful study of the pottery forms of a nation, the progress of civilization in that nation may be traced. Greek vases made of simple clay rank among the finest art treasures of the world; thus art ennobles and glorifies the rudest materials with which it may work.

In primitive work, all pottery forms were modeled and shaped by the hands alone, but later the potter's wheel, which could be turned with the clay upon it, arose to aid the forming hands. The illustration below is from the tomb of Beni Hassan, showing the Egyptians working at the potter's wheel. The first is forming the inside of the cup at the mouth, the second is cutting the cup from the mass, the third shows it completely separated, and held up, while the fourth prepares to begin the process again.

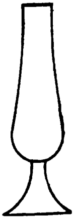


Lesson 2. **Let us model a vase. Which is the most pleasing?**

Vase and clay on each desk. Several vases on the teacher's desk.



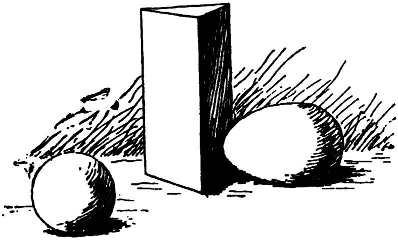
Let the children model simple vases of different forms. The model will serve for one. Do not let them hollow out the vases. Lead them to an appreciation of good form and subtilty of curve. Tell the children they are designing forms from which vases might be made by a potter.



Lesson 3. **Make a careful drawing. Will your pencil tell the truth?**

Sphere, ovoid, and equi. tri. prism on each desk.

Seeing and drawing. Let the children try to make pleasing groups with the solids. Let them change seats with each other so as to get the idea of how groups made by other children look. Let them draw the groups they have made.



Lesson 4. **What shall we build? Will the bridge hold you up?**

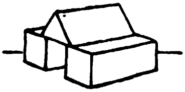
As many of the twelve solids as possible on each desk.

The work suggested here will give opportunity for construction, manual training, creative activity and imagination.

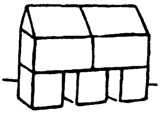
"A wall has no business to be dead. It ought to have members in its make, and purposes in its existence, like an organized creature, and to answer its ends in a living and energetic way, and it is only when we do not choose to put any strength or organization into it, that it offends us by its deadness."—*Ruskin.*

With thoughts like this in mind, lead the children to build carefully and with a clear purpose. Try to bring up beautiful thoughts in connection with the things built — a building like this will suggest —

"Over the bridge and through the wood
To grandmother's house we go,"



and recall the Christmas time.



"And the barn's brown length, and the cattle-yard,
And the white horns tossing above the wall,"

will fill this building with animal forms and carry the minds of the children to the time of year when

"Many a creaking wain
Bore slowly to the long barn-floor its load of husk and grain."

Finish the lesson by letting the children draw *pictures* of the buildings. Let them name the pictures. If there is time, Whittier's "Corn Song" might be read to the children, or Longfellow's "The Builders."

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 167.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XXVIII.

TWENTY-EIGHTH WEEK.—FORM.

SPHERE, CUBE, CONE, OBJECTS.

DRAWING VIEWS. MODELING. SEEING AND DRAWING. ARRANGING.

***Lesson 1.* Can you hold them just as I do? What view do you see?**

Sphere, cube, circles, squares, paper, and pencil on each desk.

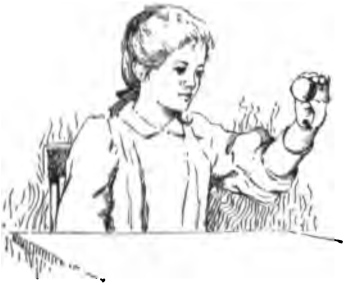


Fig. 1.

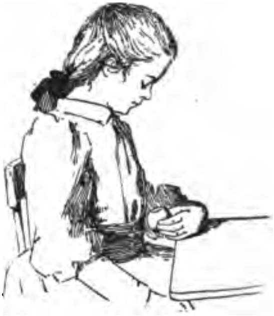


Fig. 2.

Give an exercise in holding the sphere, then the cube facing, in one position:—

1. Out in front, opposite the eyes, Fig. 1.
2. At the waist, body erect, directly below the eyes, Fig. 2.
3. Directly over the head, above the eyes.
4. Directly at the left, on a level with the eyes.
5. Directly at the right, on a level with the eyes.

Care should be taken about the holding of the model between the fingers, so that its position will not be changed—the model must not be tipped or turned—the top must remain the top, the front must remain the front, and so on, during the exercise.

Lead the children to tell that when they hold the model out in front, they see the *front* of it; when they hold the model above the head, they see the *bottom* of it; when they hold the model directly at the left, they see the right side of it, etc.

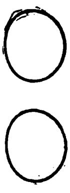
Speak of the ***view*** from the window, of a beautiful view that you have seen, of out-door views. Ask what view you have in looking at the school-room (in-door view, school-room view). These views are *pictorial*, but those which follow are geometric. The teacher should keep these distinctions clearly in mind when presenting either subject, but it is not necessary to teach them formally to the children.

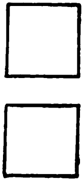
A geometric view shows two dimensions of any object. There are six outside geometric views of any object,—front view, back view, top view, bottom view, left side or end view, right side or end view. The front view shows the height and the width from left to right; the top view shows the width from left to right and from back to front; the side view shows the width from back to front and the height, and so on.

Let the children look right down at the top of the sphere, and tell what view of the sphere they have (***top view***). Bring out ***front view*** in a similar way. Let them find the ***right side view,*** the ***left side view,*** and the ***bottom view.*** Let the children talk about the arrangement of the views—the *top view* above the *front view*, the *bottom view* below the front view, the *right side view* or *right view* at the right of the front view, the *left side view* or *left view* at the left of the front view.

Let the children place the tablets* to show the front, top, bottom, left, and right views of the sphere. Let them draw those views on the board. Let the children observe, place tablets for, and draw the front, top, etc., views of the cube.

Let the children draw on their papers the top view of the sphere, and directly below it the front view. If the two drawings are not of the same width, ask the children about it, and let them re-draw the views in order that they may agree in this dimension.





Let the children draw the top and front views of the cube.

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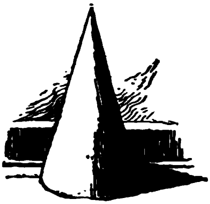
*If they have no tablets, they may cut the shapes.

Lesson 2. **Can you model a tablet? Use the thumbs well.**

Clay on each desk.

Show the children how to build up a square tablet (about four inches in diameter) by packing the clay firmly together with the thumbs. Show them how to make straight, firm sides and edges by packing the clay against one thumb with the other thumb. These tablets can be packed up and kept in a damp cloth for the lesson of the succeeding week if a decorative figure is to be made.

Lesson 3. **Have you ever seen a roof of this form? Show just how this looks.**



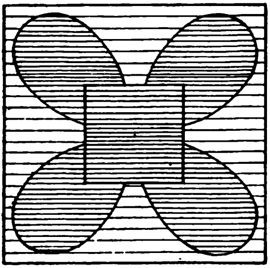
Cone, paper, pencil or charcoal on each desk.

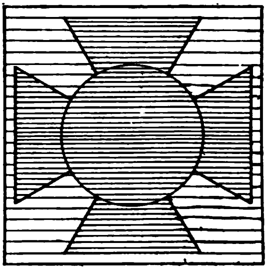
Let the children draw the cone as it looks standing on the back of the desk.

Interest the children in thinking of this solid as a part of a house — the top of the tower. Ask them to look for cone-like tops to towers on their way home from school.

Lesson 4. **What can these ornaments be used for? See how many good ones you can make.**

Circles, squares, ellipses, ovals, triangles on each desk.





Ask the children to make pleasing arrangements around a centre, using five tablets, four of which must be alike.

See how many will produce either of the figures given. Ask the children what these rosettes might be used for. Make this work a pleasure to the children, by sympathetic appreciation of what they do.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 167.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XXIX.

TWENTY-NINTH WEEK.—FORM.

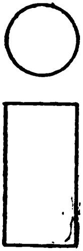
CUBE, CYLINDER, SQUARE PRISM, SQUARE PYRAMID, OBJECTS.

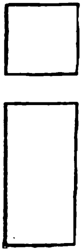
DRAWING VIEWS. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **How wide and how high is it? Notice the proportion.**

Cube, cylinder, square prism; circle, square, oblong on each desk.

Let the children hold the cylinder out in front of the eyes, facing, and look at the front view. Ask them to think how high the front view is, and how wide. (*Twice as high as it is wide.*) Ask them to hold the cylinder so as to see the top view, and to find how wide the view is from back to front and from left to right. (*Just as wide from left to right as from back to front.*) Ask the children to lay the tablets* for these views — the top view above the front view. Ask them to draw the top and front views of the cylinder.





Lead the children to study the top and front views of the square prism as they studied the views of the cylinder. Ask them the proportion of the front view of the cylinder and of the square prism — 1 to 2. Let the children draw the top and front views of the square prism.

Lesson 2. **What shall we build on our tablet? Press the clay firmly.**

Fruit or vegetable and clay on each desk.

Let the children model an apple, pear, beet, or turnip on a square or an oblong tablet, — whichever will best accommodate the object. In doing this, let the children mass the whole, the object as well as the tablet, at first and then model both into form.

If preferred, the children may use the tablets kept from the preceding week and upon them build up either of the figures given. In building on a somewhat dry tablet, care must be taken to press the new clay firmly *into* that which is dryer, so the figure will not cleave from the tablet.

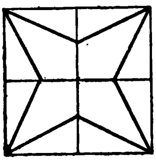


Fig. 1.

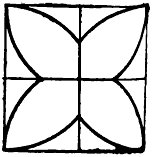


Fig. 2.

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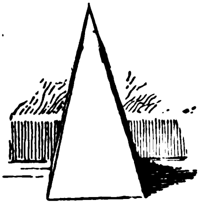
* If they have no tablets, they may cut the shapes.

Lesson 3. **Let us draw it in two positions. How shall we begin?**



Square pyramid, paper, pencil or charcoal on each desk.

Let the children draw the square pyramid as it looks on the back of the desk, first facing, then turned. Interest the children in noticing this form in buildings, etc. Later they may build a tower by combining this solid with the square prism.

Lesson 4. **Our last arrangement lesson should be our best. Show what you have learned.**

All the different tablets on each desk.

Let the children make such arrangements with the tablets as they can remember. Ask them to make new arrangements or to improve the old ones if they can. Watch to see how many will arrange new figures when given this last direction and how many will simply add tablets to the arrangements already made.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 160.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XXX.

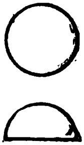
THIRTIETH WEEK.—FORM.

SPHERE, HEMISPHERE, VASE, OBJECTS.

DRAWING VIEWS. MODELING. SEEING AND DRAWING. ARRANGING.

Lesson 1. **Think well before you draw. How many views will tell how high it is, and how wide it is from left to right and from back to front?**

Sphere, hemisphere, circle, semicircle on each desk.



Let the children observe and draw the top and front views of the sphere and hemisphere. The tablets should be used as the first expression of the views. Lead the children to think of the height, width, and thickness of the models as they express these dimensions in their views.

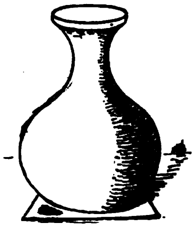
Lesson 2. **Let us play we are artists designing a frieze. Use your thumbs well.**

Spray of leaves and clay on each desk.

Let the children model a spray of leaves on a square or an oblong tablet. While the oblong tablet will make the more pleasing arrangement, the children should be allowed to use the shape best suited for the background of the spray. Be sure the leaves are not flat and lifeless. The Wandering Jew or Tradescantia makes a pretty spray, and is easily obtained.

Lesson 3. **Study the profile carefully. How much of the tablet can you see?**

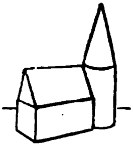
Vase, square, paper, pencil or charcoal on each desk.



Let the children draw a vase as it looks standing on a square tablet on the back of the desk. As the profiles of the vase are a little difficult to draw, it will be well to give a little practice upon these before beginning the picture. Ask the children to think how pleasant it will be, when the flowers come, to draw a vase of flowers.

Lesson 4. **Let us design a building. Shall it be a church or a home?**

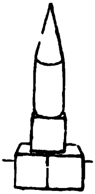
As many of the twelve solids as possible on each desk.



"A gentle boy, with soft and silken locks,
A dreamy boy, with brown and tender eyes,
A castle builder, with his wooden blocks,
And towers that touch imaginary skies."

From "The Castle Builder," by Henry W. Longfellow.

Recall the last building lesson and ask the children to build again, giving all the solids for this lesson. Bring up all the beautiful associations that can play about the buildings. For the first building given the following might be said: —



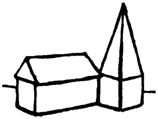
"In the ancient town of Bruges,
In the quaint old Flemish city,
As the evening shades descended,
Low and loud and sweetly blended,
Low at times and loud at times,
And changing like a poet's rhymes,
Rang the beautiful wild chimes
From the Belfry in the market
Of the ancient town of Bruges."

From "Carillon," by Henry W. Longfellow.

Longfellow's "Bells of Atri" might also be read to the children. Many stanzas will suggest themselves for the other two buildings, — both grave and gay.

"You bells in the steeple, ring, ring out your changes
However so many they be,"

From "Songs of Seven," by Jean Ingelow.



will call up the bright morning of a child's birthday, or

"Then o'er the vale, with gentle swell,
The music of the village bell
Came sweetly to the echo-giving hills,"

will remind the children of some evening home-coming in a country town; for these things appeal to children more than we think.

"Hang a lantern aloft in the belfry arch
Of the North Church tower as a signal light, —
One, if by land, and two, if by sea;
And I on the opposite shore will be,"

From "Paul Revere's Ride," by Henry W. Longfellow.

will arouse the patriotic feeling of the class.

"'Turn again, turn again,' once they rang cheerily,
While a boy listened alone:
Made his heart yearn again, musing so wearily
All by himself on a stone,"

From "Songs of Seven," by Jean Ingelow.

will give them Whittington's inspiration, perhaps.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 167.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XXXI.

THIRTY-FIRST WEEK.—FORM.

CONE, OBJECTS.

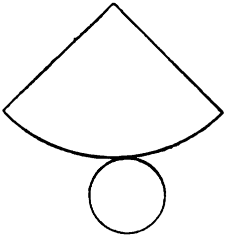
DRAWING PATTERN. CUTTING AND MAKING. SEEING AND DRAWING. STUDYING PLANT FORMS.

Lesson 1. **Wrap the paper so as to find all the surface. How many faces has it?**

Cone, two sheets of paper, 6″ × 9″, pencil, scissors on each desk.

Let the children discover how to make a pattern of a cone by wrapping paper around the cone, creasing the edge. Let them cut out the incomplete pattern and discover where it needs a lap.

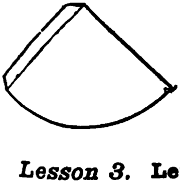
Let the children draw the entire surface of the cone, the circular base touching the curved edge of the rest of the surface.



Lesson 2. **Plan and cut carefully. Paste neatly.**

Cone, paper, pencil, scissors, mucilage, and toothpick on each desk.

Let the children plan, crease, and draw a pattern of the cone. Let them cut out the pattern and paste it to make the model. This is one of the more difficult models to paste, and care must be taken that the lap is not too wide near the vertex of the model.

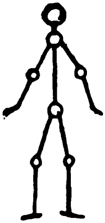


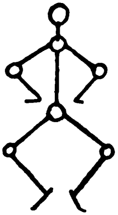
Lesson 3. **Let us study actions. How will you draw them?**

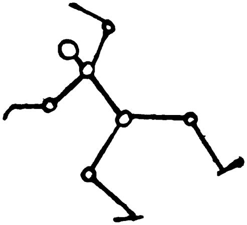
Several toothpicks, a small mass of clay, pencil and paper on each desk.

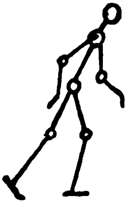
Let the children make men doing the different things indicated in the drawings given on the next page, using the toothpicks and small balls of clay for the purpose. Let the children draw pictures of these men.

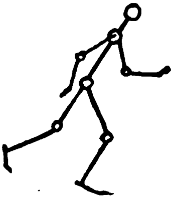
ACTION.

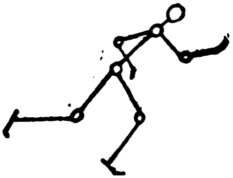

Standing.

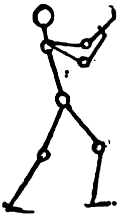

Dancing.

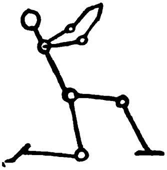

Falling.

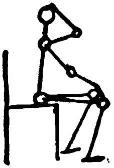

Walking.


Running.


Running Fast.


Aggressive.


Pleading.


Sitting.

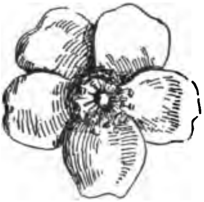
These little figures illustrate different actions by changes of direction in the skeleton lines. By these the children may be led to observe form and action, which can be expressed by drawing.

While the children should be led to enjoy the work, yet it is to be work and not mere play. This kind of drawing will aid much in the drawing to follow in later years.

Lesson 4. **Where did you find the dainty flower? Let us show how beautiful it is.**

One or more flowers, paper, pencil on each desk.

Let the children look directly down upon a single flower and study it. Do you think the sun has warmed it well? How many "leaves" were given to it? What color has the sun painted it? Do you suppose it has ever held a raindrop in its cup? Let us show how it appears when we are looking straight down upon it. Would you like a border of these dainty flowers around your room? Could you paint them as beautifully as the sun has painted this?



Do not urge conventionalism upon the children. Let them draw this as freely as they have drawn the solids and objects, only with delicate feeling, as though they were describing the spring fragrance there is about it. Ask the children to draw the flowers at home and paint them (if they have boxes of water-colors). If water-colors are provided, let the children paint the flower just drawn, if there is time.

Lesson 5. **Options.**

- (*a.*) ***Expression in nature study.*** *See Appendix I., page* 168.
- (*b.*) ***Other illustrative drawing.*** *See Appendix II.*
- (*c.*) ***Review of the week's work.***

CHAPTER XXXII.

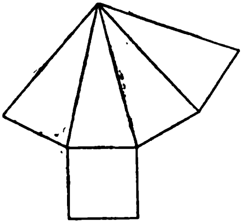
THIRTY-SECOND WEEK.—FORM.

SQUARE PYRAMID, OBJECTS.

DRAWING PATTERN. CUTTING AND MAKING. SEEING AND DRAWING. STUDYING PLANT FORM.

Lesson 1. **How many faces has it? Crease carefully.**

Square pyramid, two sheets of paper, 6″ × 9″, pencil, scissors on each desk.



Let the children discover what the pattern for the square pyramid should be by wrapping paper around the solid and creasing the edges.

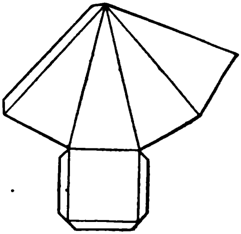
Let the children cut out what they have creased and fold it together to find where the laps should be. If there is time, let them draw a pattern on the second sheet of paper.

Lesson 2. **This is the last model to be made. Work very carefully and do your very best.**

Square pyramid, paper, pencil, scissors, mucilage, and toothpick on each desk.

Let the children crease the pattern of the square pyramid, draw the laps, and cut it out.

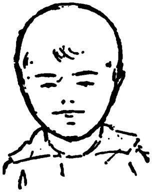
Let them fold and paste the pattern to make the model. As this is a somewhat difficult model to paste, it will be well to let the children plan how to hold it together before the mucilage is applied. Some teachers read a few verses or a short story while the children hold the model together that it may dry well.

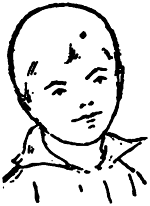


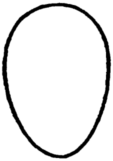
Lesson 3. **Are they laughing or crying? Make a truthful picture.**

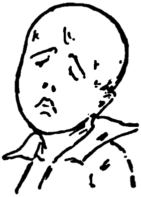
Paper, pencil or charcoal on each desk.

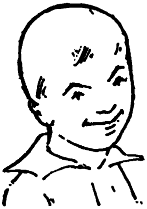
Let the children draw the face of one or more of the children. Let the children whose faces are to be drawn sit at the front of the room. Encourage the children to observe well and draw carefully. Let the exercise be "cheerful work" but not play. This is a good study in elementary physiology.











Notice with what simplicity — with how few lines — the faces are expressed in the illustration, and endeavor to lead the children to the same simplicity. To make a good outline picture draw essentials only.

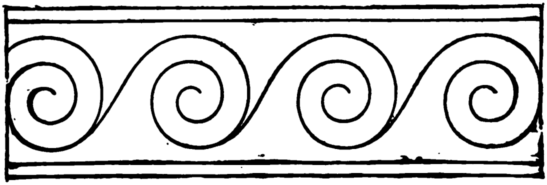
Lesson 4. **What are their woolly caps for? See how they curl up to get into them!**

Paper, pencil on each desk. Ferns about the room.

Prepare several of the large ferns that are now coming up, planting them in pots so that they may be placed in different parts of the room. Let the children observe the ferns and find how the ends are coiled into balls. Ask them to show by a simple drawing how the ends are coiled.

Celia Thaxter's poem entitled "Fern Seed" would interest the children.

Perhaps some of the children will think to put the pictures of the coils together to make something like the border given below, which is said to have been suggested by the curling waves of the Nile.



Egyptian Wave Scroll.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 169.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XXXIII.

THIRTY-THIRD WEEK.—FORM.

VASE, OBJECTS.

DRAWING PROFILES. CUTTING. SEEING AND DRAWING. STUDYING PLANT FORM.

Lesson 1. **Show me your profile. Let us draw the profiles of the vase.**

Vase, paper, pencil on each desk.

Let the children study the profiles of the vase by touch and by sight. Let them move with both hands to show how the profiles *balance* each other. Let them draw the profiles with both hands on the board. Fig. 1. Let the children think what will come between these *balancing* sides — the axis of symmetry. Let them draw Fig. 2 on paper, beginning with the base, drawing the axis of symmetry, fixing the proportion (1 to 2), and drawing the profiles and top.

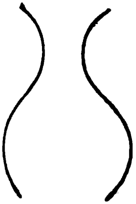


Fig. 1.

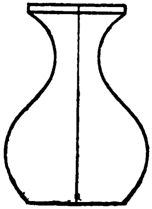
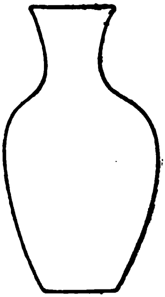


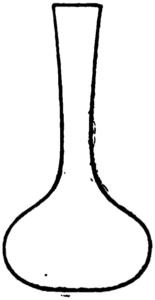
Fig. 2.

Lesson 2. **Let us be designers to-day. Which profile do you prefer?**

Vase, paper, scissors on each desk. Vases on the teacher's desk.

Let the children fold paper, and, thinking of the fold as the *axis* of the vase, cut a ***profile*** of a vase in the folded paper. Let them unfold the cutting and see whether the vases they have cut are of good proportion, and whether the curves, when balanced, are pleasing. The tendency will be toward making the vases too wide at first and too narrow later. Try to lead the pupils so that they may avoid both extremes and may gain a delicate feeling for curves.

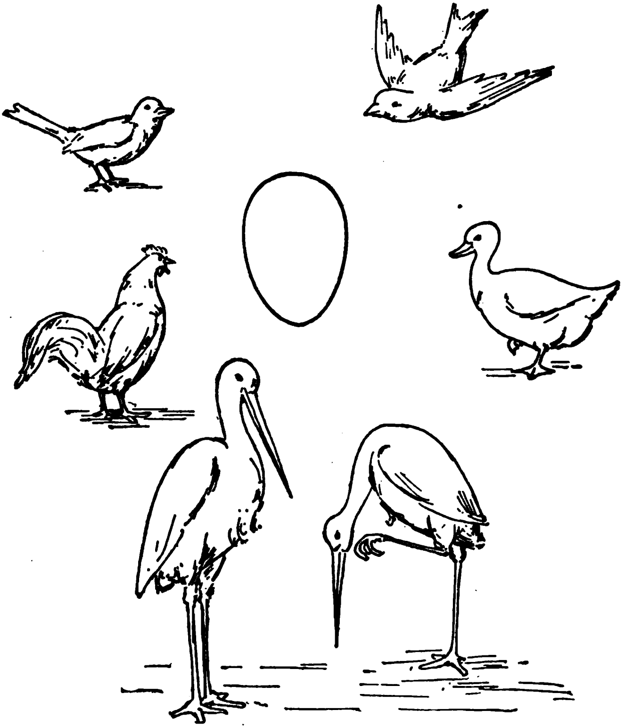




Lesson 3. **Which form goes best through water and air? Let us draw a picture of a bird.**

Ovoid, paper, pencil or charcoal on each desk. Several birds around the room.

Lead the children to see the resemblance between the form of the ovoid and that of birds. Show the children a real bird, if possible. A stuffed bird will answer if a live bird cannot be obtained. Show pictures of birds. The Prang Wall Charts of birds will furnish pictures large enough for all the class to see. Let the children draw pictures of birds, adding a little background of bushes or grass.



The children might draw an illustration for each line of the following story: —

> **Two little birds sat on a stone,**
> **One flew away, — then there was one;**
> **The other flew away, — then there was none.**

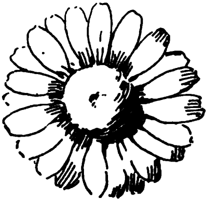
Lesson 4. **What new blossoms have come? Let us arrange a border.**

Several flowers, paper, pencil on each desk. Borders of flowers on the teacher's desk.

The borders on the teacher's desk should be very simple and delicate —nothing stronger in color than a tint. Lead the children to express the daintiness of their buttercups, wind-flowers, spring beauties, or other blossoms. When they have shown by a drawing how one blossom looks, let them think how a row of these drawings could be arranged and lines drawn to complete a border. If the children have water-colors, let them paint their borders after they are drawn. Encourage them to draw and paint borders at home.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* **176.**
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***



CHAPTER XXXIV.

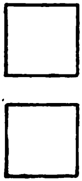
THIRTY-FOURTH WEEK.—FORM.

SQUARE PRISM, RIGHT-ANGLED TRIANGULAR PRISM, OBJECTS.

DRAWING VIEWS. MODELING. SEEING AND DRAWING. STUDYING PLANT FORM.

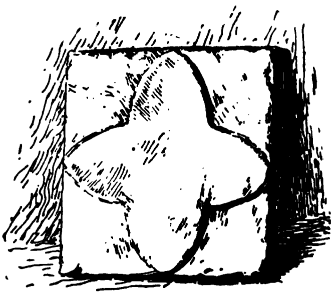
Lesson 1. **Compare the front views. What do you find?**

Square prism, right-angled triangular prism, square, oblong, right-angled triangle on each desk.



Let the children observe all the views of the square prism and the right-angled triangular prism. Let them lay the tablets* to represent these views. Let them draw the front, left, right, top, and bottom views of the square prism and right-angled triangular prism on the board. Let them draw the top and front views on paper.

Lesson 2. **Let us make a design for a frieze in a church. Can you remember a historic figure?**



Clay on each desk. Picture of quatrefoil and Greek cross on the board.

Recall the quatrefoil and Greek cross. Lead the children to talk of the decoration in churches, stone churches in particular. Ask them to think where and how they could use a modeled figure—a quatrefoil or a cross—on a tablet.

Let the modeling be suggestive rather than hard and mechanical in outline.

Lesson 3. **Let us draw a plant from the sunny window. Can you show the sunshine in your picture?**

Paper, pencil or charcoal on each desk. Several plants on desks about the room.

The illustration on the next page is a suggestion for the arrangement of large objects about the room. Boards may be procured long enough to extend across the aisles. Cleats may be screwed on the ends of the boxes of the desks to serve as support for these boards during the drawing exercise. Objects may be placed in each alternate aisle, leaving the other aisles for the teacher to pass through.

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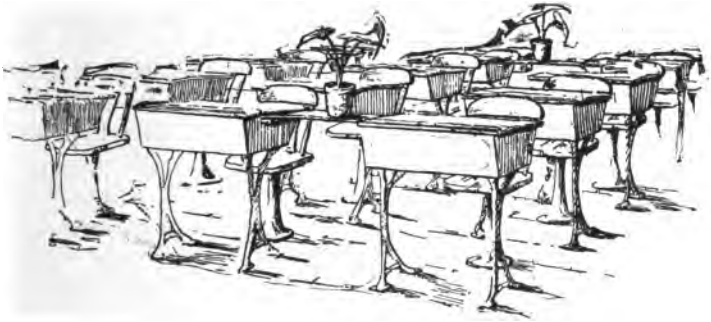
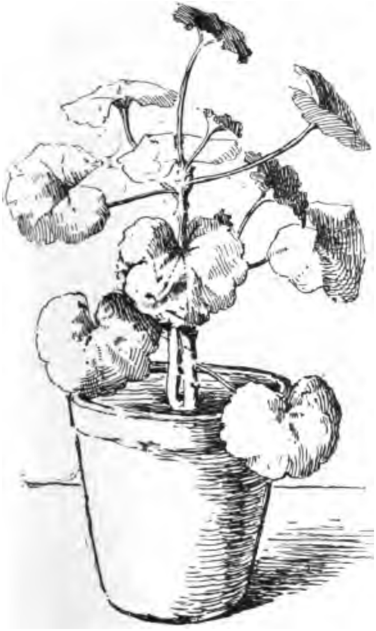
* If they have no tablets, they may cut the shapes.





Let the children choose flowers from the window to be placed on desks where they can see and draw them. If the school-room has no plants, ask the children to bring some from home. Geraniums, primroses, rubber plants, and other common house-plants make very good studies. They should, however, be as simple as possible.

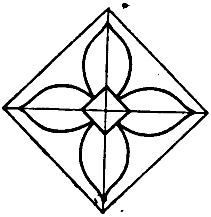
While it is not expected that the children will be led to picture details, it is hoped that they will observe earnestly and draw carefully.

But do not let them linger too long over their work. There is great advantage in securing a bright expression of early impressions. Do not let the mind get wearied before it has opportunity for expression.

Lesson 4. **Did it come from a sunny place? Let us make a rosette.**

Leaves, paper, pencil on each desk.

Let the children look down upon a leaf and then draw a picture to show how it looks. Ask them to repeat the drawing of this leaf around a centre just as they repeated the tablets around a centre. Let them think of some shape to be drawn over the centre to hold the leaves together in a rosette. Show them similar rosettes made from a delicate tone of colored paper.



If possible, let the children paint their rosettes in some delicate tone of one color. Do not encourage the thought that the rosette *must* be painted green because it comes from a leaf—although it might be painted green.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 168.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XXXV.

THIRTY-FIFTH WEEK.—FORM.

FIRST SIX SOLIDS—OBJECTS.

OBSERVING FORM. MODELING. SEEING AND DRAWING. STUDYING PLANT FORM.

Lesson 1. **Let us study views again. How many views do we need?**

One of the first six solids, paper, pencil on each desk.

Let the children find the views of any of the first six solids and then draw the front, left, right, top, and bottom views on the board. Let them think what the top view shows—the width from back to front and from left to right; what the front view shows—the width from left to right and the height. Let them draw the top and front views of either of the six solids on paper, making the *width from left to right*, the same *in the two views.*

Lesson 2. **What kind of branches have you brought? Select the most pleasing spray.**

Spray of leaves and clay on each desk.

Let the children model a spray of leaves on a tablet. In selecting the sprays, care should be taken to get two or three leaves relatively so placed as to make a pleasing whole.

Lesson 3. **Tell the story of the flowers with your pencils. Can you show that you love them?**

Glass with flowers, paper, pencil or charcoal on each desk.

Let the children draw a few simple flowers in a glass of water. Ask them to make these flowers tell as much of a story as they can. Perhaps they would like to hear what Longfellow says of the flowers.*

"Everywhere about us they are glowing;
Some like stars to tell us Spring is born;
Others, their blue eyes with tears o'erflowing,
Stand like Ruth amid the golden corn."

. . . . . .

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* From "Flowers," by Henry W. Longfellow.

"In all places, then, and in all seasons,
Flowers expand their light and soul-like wings.
Teaching us, by most persuasive reasons,
How akin they are to human things.

"And with childlike, credulous affection
We behold their tender buds expand;
Emblems of our own great resurrection,
Emblems of the bright and better land."

Lesson 4. **Let us think what kind of paper we would like in our rooms. How many would like flowers in it?**

Flowers, paper, pencil on each desk.

Let the children look down upon their daises, buttercups, pinks, lilac blossoms, etc., and then draw the picture to show how the flower looks.

Let the children think how figures are arranged on wall papers — regularly, in rows up and down and from corner to corner. Ask them to repeat the flower they have drawn over an oblong drawn on their sheet of paper in the same way. If possible, let the children color their figures, using the color they think they would like in their rooms.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 169.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***

CHAPTER XXXVI.

THIRTY-SIXTH WEEK.—FORM.

NATURAL FORMS.

SEEING AND DRAWING. MODELING. STUDYING PLANT FORM.

Lesson 1. **Where did they grow? Let us think how the place looked as we draw.**

Flowers, paper, pencil or charcoal on each desk.

Let the children study branches of leaves or branches with flowers. Let them draw pictures of these.

Ask each of them to bring some stanza with the branch or flower they choose for the lesson. Let them write these stanzas under the drawings when finished.

"Violet! dear violet!
Thy blue eyes are only wet
With joy and love of Him who sent thee,
And for the fulfilling sense
Of that glad obedience
Which made thee all that Nature meant thee!"
— *Lowell.*

From "Song," by James Russell Lowell.

Lesson 2. **Let us do our best to-day. What have you brought?**

Flowers and clay on each desk.

Let the children model a flower or spray of leaves with a flower. Lead them to think of the sun shining down upon the flowers in the early morning when the dew is on them. Ask them to make the flowers look as soft and sweet as when they were picked.

Lesson 3. **Close your eyes. Can you remember how it looked?**

Paper, pencil or charcoal on each desk.

Let the children make a drawing of a window garden or a flower-bed they have seen either at home or on the way to school. Ask them to make a pleasant, sunshiny picture.

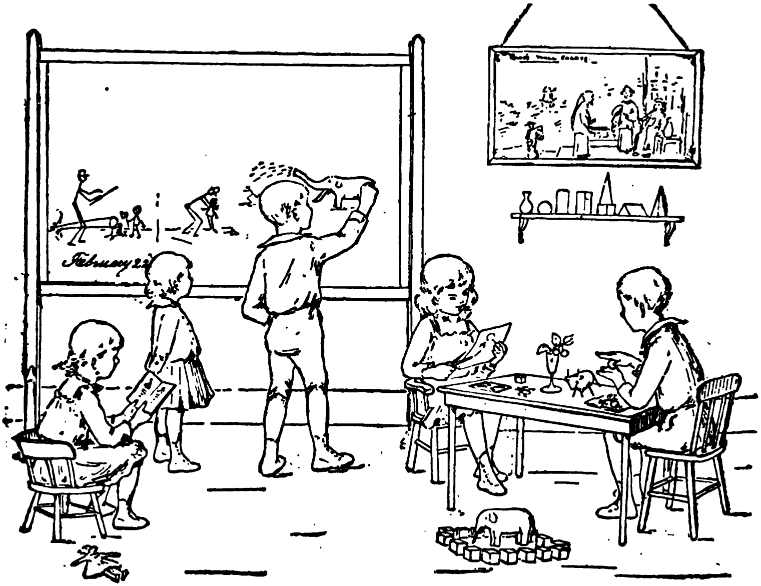
Lesson 4. **What can you make of the petals? Let us arrange them**

Rose petals, paper, pencil on each desk.

Let the children arrange rose "leaves" in rosettes, and then into borders or surface covering. Tell the children how the children in India are taught to make designs with rose "leaves" in the sand.

Lesson 5. **Options.**

(*a.*) ***Expression in nature study.*** *See Appendix I., page* 169.
(*b.*) ***Other illustrative drawing.*** *See Appendix II.*
(*c.*) ***Review of the week's work.***



APPENDIX I.

EXPRESSION IN NATURE STUDY.

I GRIEVE not that ripe knowledge takes away
The charm that Nature to my childhood wore,
For, with that insight, cometh, day by day,
A greater bliss than wonder was before;
The real doth not clip the poet's wings, —
To win the secret of the weed's plain heart
Reveals some clew to spiritual things,
And stumbling guess becomes firm-footed art.

— *Lowell.*

Not unrelated, unaffied,
But to each thought and thing allied,
Is perfect Nature's every part,
Rooted in the mighty Heart.

— *Emerson.*

The observation of natural forms and phenomena gives the pupil a systematic habit of thought, leads him to scientific methods of study, and teaches him to distinguish not only differences in degree, but difference in kind, the superficial from the fundamental, the individual from the typical.

The contact of the child with nature should be made healthful and strengthening to the moral nature, leading the thought and feeling of the child to a sympathy with all created things, and to a sense of the presence of the Creator. — *Louisa P. Hopkins.*

A few suggestions are offered for the expression by drawing of the child's observation of nature. It is hoped that these suggestions will be helpful to the teacher in her efforts toward a unification of the various studies, as well as illustrative of the broad use of drawing as a means of expression.

At this stage in the development of the child it is not expected that he will search very deeply into the causes of natural phenomena; that he will analyze very closely the formation of the pebbles with which he plays, or that he will study all the parts of an animal. Neither is it necessary for him to pull to pieces the flower he admires for its gay color or its pleasant perfume in order to learn that one part is called the petiole and certain other parts stipules or petals. The teacher's aim is to direct the ever active observation of the child to an intelligent, but loving and gentle study of those things in nature which are so closely related to his own individual life.

A brief schedule of lessons is offered, suggesting topics in which the child will be likely to find drawing a natural and ready means of expression. By a careful study of the children's drawings the teacher will find out how much has actually been gained by them in their observations, and will also find where her direction of the observations may be changed to gain higher attainments in the work.

The schedule of lessons is intended simply to show what may be done with even the youngest children. It has been arranged with a view to leading the children to observe the changing season and the familiar objects around them in their daily lives. In the study of trees, for instance, they observe the trees they pass on the way to school (the maple is suggested as it is a common shade tree, but any tree may be taken instead), not only because the trees are familiar, but because they can be studied all the year round.

The following outline of lessons is intended to show how the different subjects in nature study may be taken up, so that each may follow the round of the seasons.

OUTLINE OF LESSONS.

SEPTEMBER.

First Week. **The Heavens.** Sun, sunshine, sunbeams. The pleasure they give. The work they do.

For Chapter I. of Form Study, page 26, Lesson 5.

Second Week. **Plants.** Fruitage — grapes, apples, pears, melons.

For Chapter II. of Form Study, page 32, Lesson 5.

Third Week. **Pet Animals.** Kitty-cat.

For Chapter III. of Form Study, page 38, Lesson 5.

Fourth Week. **Plants.** Fruitage — pumpkin, squash, egg-plant, etc.

For Chapter IV. of Form Study, page 42, Lesson 5.

OCTOBER.

First Week. **Pet Animals.** Dogs.

For Chapter V. of Form Study, page 46, Lesson 5.

Second Week. **The Heavens.** Moon, stars.

For Chapter VI. of Form Study, page 50, Lesson 5.

Third Week. **Plants.** Trees — autumn foliage.

For Chapter VII. of Form Study, page 54, Lesson 5.

Fourth Week. **Plants.** Fruitage — nuts, grain, etc.

For Chapter VIII. of Form Study, page 59, Lesson 5.

NOVEMBER.

First Week. **Plants.** Fruitage — seeds and seed-vessels.

For Chapter IX. of Form Study, page 62, Lesson 5.

Second Week. **The Air.** Clouds, vapor, rain, etc.

For Chapter X. of Form Study, page 65, Lesson 5.

Third Week. **Plants.** Roots — beet, carrot, turnip, parsnip, salsify, etc Underground branch — potato.

For Chapter XI. of Form Study, page 68, Lesson 5.

Fourth Week. **Animals.** Turkey, chickens, etc.

For Chapter XII. of Form Study, page 70, Lessons 1 and 2.

DECEMBER.

First Week. **Plants.** Trees — condition in winter.

For Chapter XIII. of Form Study, page 75, Lesson 5.

Second Week. **Animals.** Rabbit, squirrel, etc.

For Chapter XIV. of Form Study, page 80, Lesson 5.

JANUARY.

First Week. **The Air.** Snow, hail, frost, ice.

For Chapter XV. of Form Study, page 83, Lesson 5.

Second Week. **Animals.** The horse.

For Chapter XVI. of Form Study, page 86, Lesson 5.

Third Week. **The Air.** Snow, hail, frost, ice.

For Chapter XVII. of Form Study, page 91, Lesson 5.

Fourth Week. **Minerals.** Coal.

For Chapter XVIII. of Form Study, page 95, Lesson 5.

FEBRUARY.

First Week. **Minerals.** Gold, silver.

For Chapter XIX. of Form Study, page 98, Lesson 5.

Second Week. **Animals.** The cow.

For Chapter XX. of Form Study, page 101, Lesson 5.

Third Week. **Minerals.** Iron, copper, nickel.

For Chapter XXI. of Form Study, page 104, Lesson 5.

Fourth Week. **The Earth.** Land, water, rivers.

For Chapter XXII. of Form Study, page 107, Lesson 5.

MARCH.

First Week. **The Air.** Winds, etc.

For Chapter XXIII. of Form Study, page 111, Lesson 5.

Second Week **Minerals.** Stones, pebbles, slate, slate pencils.

For Chapter XXIV. of Form Study, page 114.

Third Week **Plants.** Branches and leaf-buds. Possibly signs of growth.

For Chapter XXV. of Form Study, page 116, Lesson 5.

Fourth Week. **Plants.** Growth of seedlings, sprouting.

For Chapter XXVI. of Form Study, page 118, Lesson 5.

APRIL.

First Week. **Plants.** Growth of seedlings. Stem, cotyledons (name not given), roots. Food. Another observation of leaf-buds — growth indicated by swelling.

For Chapter XXVII. of Form Study, page 121, Lesson 5.

Second Week. **Plants.** Growth of seedlings. Review stem and root. Observe the first leaves. Disappearance of food. Possibly a study of snowdrops, daffodils, and crocuses coming up in yards at home, or a study of swelling of leaf-buds.

For Chapter XXVIII. of Form Study, page 125, Lesson 5.

Third Week. **The Air.** Clouds; shower and sunshine — rainbow.

For Chapter XXIX. of Form Study, page 127, Lesson 5.

Fourth Week. **Plants.** Growth — swelling buds on tree branches or further study of seedlings. Seedlings have more leaves and the food has probably disappeared. Snowdrops, daffodils, hyacinths — manner of coming up, possibly blossoms.

For Chapter XXX. of Form Study, page 130, Lesson 5.

MAY.

First Week. **Plants.** Trees, garden shrubs, and wild flowers. Bursting leaf-buds. Sap.

For Chapter XXXI. of Form Study, page 133, Lesson 5.

Second Week. **Plants.** Trees, garden shrubs, and wild flowers. Leaves, probably blossoms.

For Chapter XXXII. of Form Study, page 136, Lesson 5.

Third Week. **Animals.** Birds — nest-building, eggs, etc. Singing.

For Chapter XXXIII. of Form Study, page 139, Lesson 5.

Fourth Week. **Plants.** Trees, garden shrubs and plants, and wild flowers. Leaves, blossoms.

For Chapter XXXIV. of Form Study, page 142, Lesson 5.

JUNE.

First Week. **Plants.** Garden plants and wild flowers. Blossoms.

For Chapter XXXV. of Form Study, page 144, Lesson 5.

Second Week. **Animals.** Birds — care of young. Singing.

For Chapter XXXVI. of Form Study, page 146, Lesson 5.

NATURAL PHENOMENA.

Spring comes hither,
  Buds the rose;
Roses wither,
  Sweet spring goes.

Summer soars, —
  Wide-winged day;
White light pours,
  Flies away.

Soft winds blow,
  Westward born;
Onward go,
  Toward the morn.

— *George Eliot.*

The Robin sang about the Sunshine breaking through the cloud; about the Rainbow smiling over the weary, rain-clogged Earth; about the mild, still, hazy autumn days that soothe the September gale to sleep; he sang of the glory of the Dawn after the dark Night; he sang, too, about the crumbs that little children strew upon the ground when it is covered with snow; and about the moist warm Wind that releases the frozen streams, and unwraps the young buds from their winter swathing bands. — *Mary S. Claude.*

Think, every morning, when the sun peeps through
The dim, leaf-latticed windows of the grove,
How jubilant the happy birds renew
Their old, melodious madrigal of love!
And when you think of this, remember, too,
'T is always morning somewhere and above
The awakening continents, from shore to shore,
Somewhere the birds are singing evermore.

— *Longfellow.*

In directing the child's attention to the phenomena of nature, it is best that the lesson be apparently called out by the conditions present. For this reason the schedule suggests a study of sunshine in September; a study of the moon and stars in October (while the weather is yet so mild that even little children may be allowed to go out in the evening to make their own observations); a study of clouds, vapor, and rain in November; while April will surely give opportunity to study the quick transition from clouds and showers to sunshine, and perhaps the always wonderful rainbow.

The following list of exercises, containing an illustrative lesson on sunbeams, will show how the study of natural phenomena may be carried on through the year. The place these lessons occupy in the year's course in Expression in Nature Study will be found in the schedule, pages 74-77.

Lesson 1. Sun—Sunbeams.

Talk with the children about the sun and the sunshine, and the sunbeams. Draw upon the board a large circle for the sun and a small one for the earth and ask some one to draw a sunbeam from the sun to the earth. Ask others to draw sun, earth, and sunbeams. Either of the following poems or songs might be used in connection with this lesson: —

Note. — All the poems and songs referred to in this appendix are taken from the following books: —

" Open Sesame," and the First and Second Readers of " The National Music Course." — Ginn & Co., Boston.

" Child Life " and " Poems for Children." — Houghton, Mifflin & Co., Boston.

" The Little Ones' Annual." — Estes & Lauriat, Boston.

" Young Folks' Book of Poetry." — Lee & Shepard, Boston.

" Grandma's Rhymes and Chimes." — Roberts Brothers, Boston.

" The Dead Doll and Other Poems." — Ticknor & Co., Boston.

First and Second Readers of " The Normal Music Course." — Silver, Burdett & Co., Boston.

The children's magazines — " The Chatterbox," " Wide-Awake," " Babyland," " Little Men and Women," and " St. Nicholas," — will afford much more literature on the subjects that follow.

POEMS.

" Sunshine." — *From Delavigne.*
From " Open Sesame," Vol. I.

" The Rainbow." — *John Keble.*
From " Open Sesame," Vol. I.

SONGS.

" If I were a Sunbeam." — *Lucy Larcom.*
From " The Normal Music Course," Second Reader.

" A Few Stray Sunbeams." — *Eliza Sproat Turner.*
From " The Normal Music Course," Second Reader.

" Good Morning to you, Sunshine, Dear." — *Eckelmann.*
From " The Normal Music Course," First Reader.

" Summer Suns are Glowing." — *W. W. How.*
From " The Normal Music Course," First Reader.

Lesson 2. **Observation of moon and stars.**

Let the children bring stories of their observations of the moon and stars for several days. Take up these stories, with those of the day added. Let the children draw pictures of the moon and stars.

Show pictures of the moon (not old photographs — they are not true), and of moonlight and starlight scenes. Read some poem about the moon or stars, or teach the children a song about them.

The following poems and songs are fitting ones for this lesson: —

POEMS.

"The Waning Moon." — *Celia Thaxter.*
From "Poems for Children."

"Lady Moon." — *Lord Houghton.*
From "Child Life."

"The New Moon." — *Mrs. Follen.*
From "Child Life."

"The Man in the Moon." — *Mrs. A. D. Bell.*
From "Grandma's Rhymes and Chimes."

"The Moon." — *Anonymous.*
From "Open Sesame," Vol. I.

"Stars." — "*Poems for a Child.*"
From "Open Sesame," Vol. I.

"The Dipper." — *Mary A. Allen.*
From "Grandma's Rhymes and Chimes."

"The Little Boy and the Stars." — *Aunt Effie's Rhymes.*
From "Young Folks' Book of Poetry."

SONGS.

"The New Moon." — *Mrs. Follen.*
From "The Normal Music Course," Second Reader.

"The Moon and One Star." — *Mrs. Anderson.*
From "The Normal Music Course," Second Reader.

"The Moon." —
From "The National Music Course," Second Reader.

"Little Star." — *Elliot Collection.*
From "The Normal Music Course," Second Reader.

Lesson 3. Observation of clouds, vapor, and rain.

Let the children bring stories of their observations of clouds, vapor, and rain for several days. Take up these stories in the lesson, and also the weather of the day. Lead the children to think of the usefulness of clouds and rain. Let them draw an out-of-door picture and show the rain falling, or a group of objects suggestive of a rainy day. Show them good pictures of rain, clouds, etc., or read a poem or teach them a song relating to the lesson. Many charming suggestions will be found in "Brooks and Brook Basins," by Alexander E. Frye. — Ginn & Co., Boston.

A list of poems and songs is given below: —

POEMS.

"Robin's Rain Song." — *Celia Thaxter.*
From "Poems for Children."

"April and May." — *Celia Thaxter.*
From "Poems for Children."

"The Song of the Spring Rain." — *Elizabeth A. Davis.*
From "Grandma's Rhymes and Chimes."

"The Talking Rain." — *George Cooper.*
From "The Little Ones' Annual."

"Little Raindrops." — *Aunt Effie's Rhymes.*
From "Young Folks' Book of Poetry."

"The Shower." —
From "Young Folks' Book of Poetry."

AUTUMN'S MIRTH.

'T is all a myth that Autumn grieves,
For watch the rain amid the leaves;
With silver fingers dimly seen
It makes each leaf a tambourine,
And swings and leaps with elfin mirth
To kiss the brow of mother earth;
Or, laughing 'mid the trembling grass,
It nods a greeting as you pass.
Oh! hear the rain amid the leaves —
'T is all a myth that Autumn grieves!

'T is all a myth that Autumn grieves,
For list the wind among the sheaves;
Far sweeter than the breath of May,
Or storied scents of old Cathay,
It blends the perfumes rare and good
Of spicy pine and hickory wood.
And with a voice in gayest chime,
It prates of rifled mint and thyme.
Oh! scent the wind among the sheaves —
'T is all a myth that Autumn grieves!

'T is all a myth that Autumn grieves;
Behold the wondrous web she weaves!
By viewless hands her thread is spun
Of evening vapors shyly won.
Across the grass from side to side
A myriad unseen shuttles glide
Throughout the night, till on the height,
Aurora leads the laggard light.
Behold the wondrous web she weaves —
'T is all a myth that Autumn grieves!

— *Samuel Minturn Peck.*

SONGS.

"The Rain." — *Schade.*

From "The National Music Course," Second Reader.

"The Shower." —

From "The National Music Course," Second Reader.

Lesson 4. **Observation of snow, hail, frost, and ice.**

Let the children bring stories of their observations of snow, frost, etc. Let them observe snow and ice crystals if possible. Take up all of these observations in the lesson. Let the children draw pictures of what they saw in the snow (crystals if they observed them), or of a frozen pond or lake they know, and show boys and girls skating upon it, etc. Show good pictures that will illustrate any child's observation to the class. Read a poem or teach a song applicable to the subject.

The following poems and songs are suited to Lessons 4 and 5 : —

POEMS.

"Winter." — *From the German.*
From "Child Life."

"Snow." —
From "Young Folks' Book of Poetry."

"The Snow Man." — *Marian Douglass.*
From "Young Folks' Book of Poetry."

"Jack Frost." — *Celia Thaxter.*
From "Poems for Children."

"The Ice King." — *Jennie Joy.*
From "The Little Ones' Annual."

"The Flock of Doves." — *Celia Thaxter.*
From "Poems for Children."

SONGS.

"It Snows." — *Hannah F. Gould.*
From "The Normal Music Course," Second Reader.

"Winter Song." — *Translated by Mrs. L. T. Cragin.*
From "The National Music Course," First Reader.

"Winter Song." — *Hölty, Translated by C. T. Brooks.*
From "The Normal Music Course," Second Reader.

"Old Winter is a Sturdy One." — *Dülcken.*
From "The Normal Music Course," First Reader.

Lesson 5. **Observation of snow, hail, ice, and frost.**

Further work in the line of that of Lesson 4.

Lesson 6. **Observation or memory — Earth, land and water — also rivers.**

Let the children bring the results of their observations as before In addition to present observations, lead them to tell of their observations the previous summer when going about in a carriage or in the cars. Ask them to bring pictures of scenes they saw, if possible. As they tell their observations, let them draw pictures of rivers, lakes, or ponds they have seen. Lead them to think of the usefulness of rivers and lakes.

In connection with this study of the earth the following poems may be found helpful: —

POEMS.

"The World." — *Browne.*
From "Young Folks' Book of Poetry."

"The Creator." —
From "Young Folks' Book of Poetry."

"Song of Summer." — *Mary Mapes Dodge.*
From "Young Folks' Book of Poetry."

"The Brook." — *Tennyson.*

"All Things Beautiful." — *Mrs. Alexander.*
From "Child Life."

Lesson 7. **Observation of air, wind, etc.**

Let the children bring their observations of what the wind does. Lead them to think of the usefulness of the wind rather than its destructiveness. Let them draw pictures showing what the wind does, — flags blowing, weathervanes turning, ships sailing, and windmills. Show pictures to make them think of the usefulness of the wind.

The following poems and songs may aid in this study: —

POEMS.

"What the Winds Bring." — *Edmund C. Stedman.*
From the "Young Folks' Book of Poetry."

"March." — *Celia Thaxter.*
From "Poems for Children."

"The Kite Ted Made." — *Mrs. Clara Doty Bates.*
From "Grandma's Rhymes and Chimes."

SONGS.

"The Wind." —
From "The National Music Course," First Reader.

"In the Snowing and the Blowing." — *Anonymous.*
From "The Normal Music Course," First Reader.

"Whichever Way the Wind Doth Blow." —
From "The Normal Music Course," First Reader.

Lesson 8. **Observation of clouds, showers, sunshine, and the rainbow.**

Let the children bring stories of their observations as before. Let them draw pictures of the things they tell of, if possible.

Sing a song of raindrops,
Clouds and April weather,
Four-and-twenty redbreasts
Caught out together.
When the shower was ended
What a song was heard
About the rainbow splendid,
From each dripping bird!

— *Selected.*

The following poems and songs are applicable to this lesson: —

POEMS.

"The Gladness of Nature." — *Wm. Cullen Bryant.*
From "Child Life."

"Good morning." — *Browning.*
From "Open Sesame," Vol. 1.

"The Water-Bloom." — *Celia Thaxter.*
From "Poems for Children."

SONGS.

"Hush, I Hear the Silver Rain." — ***Barry Cornwall.***
From "The Normal Music Course," First Reader.

"Bo-Peep." — ***Mrs. Anderson.***
From "The Normal Music Course," Second Reader.

"Brother Robin." — ***Mrs. Anderson.***
From "The Normal Music Course," Second Reader.

STUDY OF PLANT LIFE.

Give fools their gold, and knaves their power;
  Let fortune's bubbles rise and fall;
Who sows a field, or trains a flower,
  Or plants a tree is more than all.
— *Whittier.*

Our common mother rests and sings,
  Like Ruth, among her garnered sheaves;
Her lap is full of goodly things,
  Her brow is bright with autumn leaves.
— *Whittier.*

Begin the observation of plant life at any point, or with any material most accessible. With little children it is not necessary to follow a system, but only to lead them to love plants, and to observe them carefully. Never fail to bring out some appreciation of the beauty of form and color presented to the eye; and, later, of the order and design of the whole plant, as well as of its various parts and their uses. Always involve the sympathy and love of children in the study of nature, as such activities educate the æsthetic sense and the faculties of the soul. — *Louisa P. Hopkins.*

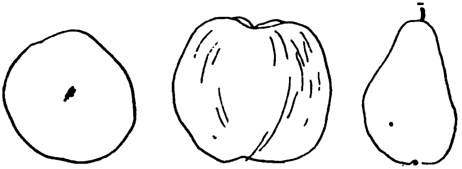
An outline, similar to that for the study of natural phenomena, is given as a suggestion for the study of the growth and reproduction of plants. The illustrative lesson is intended to show the spirit of the work, and especially to show that there is a far higher pleasure in the study of vegetable life than the gratification of the sense of taste by its culmination, — the fruit.

It is hoped that, while the child is led to observe the details of growth to some extent, he may be allowed to keep his admiration for the beautiful whole, and that, through this love, he may be influenced to look upward to the Source of all beauty.

The following list of exercises will show how the observation of plant growth may be made to conform to the changes of season, the children's surroundings, etc. The place the exercises take in the year's course in Expression in Nature Study may be found by referring to the schedule on pages 74–77.

Lesson 1. **Plants, Fruitage.**

Ask the children to bring fruit. Talk with them about it, bringing up pleasant thoughts, and let them draw it.



Children's Drawings of Fruit.

The following poems and songs will furnish suggestions for keeping the thought of this lesson and also the following lesson on fruit in the children's minds: —

POEMS.

"Among Green Pleasant Meadows."— *From the German of Herder.*
From "Child Life."

"Dust."— *Celia Thaxter.*
From "Poems for Children."

SONGS.

"Little Jack Horner."— *Mother Goose.*
From "The Normal Music Course," First Reader.

"Autumn Song."— *From Schneider.*
From "The National Music Course," First Reader.

Lesson 2. **Observation of the pumpkin, squash, egg-plant, etc.**

Lead the children to see the beauty as well as the use of these plainer fruits. Let them save some of the seeds to plant later in the year when they study plant growth. Let the children draw pictures of these fruits. Read some poem or story or sing some song applicable to the subject. The poem given below will suggest others to the teacher's mind.

POEM.

"The Pumpkin." — *J. G. Whittier.*

Lesson 3. **Observation of autumn foliage.**

It is hoped that children may select some tree to watch through the year. As maple trees are so commonly used for shade in parks and along streets, doubtless the children will pass at least one on the way to school. Let the children bring leaves from their trees (or from others) and let them draw a picture to show how the tree looks. Let them make pictures of the leaves — but not by tracing around them.

The following song will please the children and will probably suggest other songs and poems to the teacher: —

SONG.

"The Dance of the Leaves." — *James Geddes.*
From "The Normal Music Course," First Reader.

Lesson 4. **Observation of nuts, grain, etc.**

Ask the children to bring stories of their observations of fields of grain or to tell of nutting expeditions. Let them bring heads of grain, nuts, etc., if possible. If they cannot see fields of grain they can see grain in bulk in many places. Show heads of different grains, and show nuts in burrs. Let the children draw the nuts.

The following poems will suggest other poems or will bring to mind songs that can follow this lesson.

POEMS.

"Nutting Time." — *Lavinia S. Goodwin.*
From "Grandma's Rhymes and Chimes."

"The Good Giant." — *George E. Cooper.*
From "The Little Ones' Annual."

THE CHESTNUT BURR.

A wee little nut lay deep in its nest
Of satin and brown, the softest and best,
And slept and grew while its cradle rocked,
As it hung in the boughs that interlocked.

Now the house was small where the cradle lay,
As it swung in the winds by night and day;
For a thicket of underbrush fenced it round,
This lone little cot by the great sun browned.

The little nut grew, and ere long it found
There was work outside on the soft green ground;
It must do its part, so the world might know
It had tried one little seed to sow.

And soon the house that had kept it warm
Was tossed about by the autumn storm.
The stem was cracked, the old house fell,
And the chestnut burr was an empty shell.

But the little tree, as it waiting lay,
Dreamed a wonderful dream day by day,
Of how it should break its coat of brown,
And live as a tree, to grow up and down.

— *Adapted.*

From the "Kindergarten Magazine," September, 1892.

Lesson 5. **Observation of seeds and seed-vessels — The pea, bean, squash-seeds, melon-seeds, etc.**

Encourage the children to bring seeds and seed-vessels, and connect their observation of these with the forms they are studying, as much as possible. The poppy pods, morning-glory capsules, rose haws, and many other seed-vessels, as well as a large number of seeds, resemble spheres. Lead the children to see use and beauty in all these things. Let the children draw pictures of the seed-vessels and seeds.

The following poems and songs will suggest a way of leading the children to a more delighted study of seeds.

POEMS.

"Seeds and Fruits." — *Keble.*
From "Young Folks' Book of Poetry."

"Sowing." —
From "Young Folks' Book of Poetry."

"September." — *Helen Hunt Jackson.*
From "Open Sesame."

"Who told?" — *Mrs. Clara Doty Bates.*
From "The Little Ones' Annual."

"The Story of an Apple." — M. J.
From "The Little Ones' Annual."

SONG.

"The Seed." —
From "The National Music Course," First Reader.

Lesson 6. **Observation of roots used for food — The beet, carrot, turnip, etc. Also of the underground branch — the potato.**

Ask the children to bring vegetables and lead them to think of them as attractive because of their usefulness. Let them draw pictures of the vegetables. The following poem will aid in giving a higher turn to the thought about these homely but useful vegetables.

POEM.

"The Huskers." — *J. G. Whittier.*

Lesson 7. **Observation of the winter condition of trees.**

Ask the children from time to time how their trees look; and whether they see anything new about them. During this week, collect as many stories about the trees as possible. Talk with the children about the care that is taken of the trees even in winter; tell them how the snow helps to keep them warm, and how necessary it is for them to sleep. Let the children draw pictures of the trees showing how they look in winter.

The poem and song given below will suggest poems or songs that are appropriate to this lesson.

POEM.

"The Oak." — *Alfred Tennyson.*
From "Open Sesame." Vol. I.

SONG.

"Winter Song." — *Hölty, translated.*
From "The Normal Music Course," Second Reader.

Lesson 8. **Observation of branches of trees and shrubs.**

At this time there will probably be signs of growth in the swelling of leaf-buds on shrubs in sheltered corners. Let the children observe branches that show or do not show signs of growth. Let them find the leaf-buds, and interest them in looking at home or in the fields for some that are beginning to show signs of growth. Let them draw a branch. Perhaps these branches can come from the children's own trees. Caution the children about breaking the trees too freely.

The songs given below will suggest other songs or poems the children will be glad to hear or learn.

SONGS.

"The Four Seasons." — *From the German of Dülcken.*
From "The Normal Music Course," Second Reader.

"In the Snowing and the Blowing." — *Anonymous.*
From "The Normal Music Course," First Reader.

Lesson 9. **Observation of the growth of seedlings — Sprouting.**

The seeds must be prepared for this lesson six or eight days in advance. Lead the children to observe well and to show what they see by drawing.

The following songs will suggest songs or poems that will awaken the interest of the children.

"Bo-peep." — *Mrs. Anderson.*
From "The Normal Music Course," Second Reader.

"When the Wintry Wind is Blowing." — *German, translated.*
From "The Normal Music Course," First Reader.

Lesson 10. **Observation of the growth of seedlings — The stem, the cotyledons, the roots.**

Provide each child with an uprooted plant. Lead the children to observe the plant, — the stem, the roots. Let them observe, also, how *thick* the cotyledons are. Reserve this last point for further observation — it will not be necessary to give the name cotyledon. Let the children draw the plants as they look.

A further observation of leaf-buds may also be taken up in this lesson. Keep alive the interest of the children in their chosen trees. Doubtless the buds will be swelled sufficiently to be noticeable by this time.

Lesson 11. **Observation of the growth of seedlings.**

Review the stem and root. Probably the first leaves will be sufficiently started to be studied. If this is the case, the cotyledons will have shrunk, so the children will be able to see the change. Give the idea of the eating of food to make the plant grow, — just as children eat food to make them grow. Let the children draw the plants as they now are.

Further observation of leaf-buds may be made here if thought best.

Possibly the snowdrops, daffodils, crocuses, and hyacinths will be out of the ground in the gardens at home. If so, let the children tell what they have observed about them. If the flowers have started so that the children have seen them, the following poems and song will be appropriate.

POEMS.

"Daffy-Down-Dilly." — *Miss Warner.*
From "Young Folks' Book of Poetry."
"The Crocus." — *H. F. Gould.*
From "Young Folks' Book of Poetry."

SONG.

"The Bluebird." — *Emily Huntington Miller.*
From "The Normal Music Course," Second Reader.

Lesson 12. **Observation of growth in trees and garden shrubs.**

The leaf-buds will now be quite large, — possibly they will be bursting. Let the children draw the buds, if they have opened sufficiently to be interesting.

A further observation of the growth of seedlings may be taken, if desired. The leaves will probably have grown, and the food will have gone from the cotyledons.

The snowdrops, crocuses, and daffodils will now be out in gardens and parks. Encourage the observation of these, and, if possible, have some of the flowers to talk about.

The following poems and song will be found appropriate to the season: —

POEMS.

"The Daffodils." — *Wordsworth.*
From "Young Folks' Book of Poetry."

"The Crocus." — *Celia Thaxter.*
From "Poems for Children."

"Spring." — *Celia Thaxter.*
From "Poems for Children."

"Song of Spring Rain." — *Elizabeth O. Davis.*
From "Grandma's Rhymes and Chimes."

SONG.

"Spring." —
From "The Normal Music Course," Second Reader.

Lesson 13. Observation of trees, garden shrubs, or wild flowers.

The leaf-buds are bursting. If the branch is cut the *sap* will start. Let the children draw a branch showing the young leaves. If any of the children go into the country they will possibly now find the early flowers, — spring beauty, arbutus, and others. If any flowers are brought, let the children observe and then draw them.

The following poem may suggest further observation on the part of the children: —

POEM.

"The Tree." — *Bjornstjerne Bjornsen.*
From "Child Life."

Lesson 14. **Observation of trees, garden shrubs, and wild flowers.**

The leaves will be out, and probably many of the early blossoms will show in the parks or gardens or fields. Let the children draw leaves or flowers.

The following poem and song may offer suggestions to the teacher for inciting further observation, or for turning the thoughts of the children to the higher things in nature.

POEM.

"The Nobler Nature." — *Ben Jonson.*

From "Young Folks' Book of Poetry."

SONG.

"The Leafy Boughs are Nodding." — *Mrs. Anderson.*

From "The Normal Music Course," Second Reader.

Lesson 15. **Observation of trees, garden shrubs and plants, and wild flowers.**

Leaves and blossoms will now be abundant. Let the children draw these.

"I held a flower in my hand as I stood before a class of neglected children. All eyes were fixed upon it, — they love flowers so, these poor little ones. 'I like to hold this lovely flower in my hand,' I said. 'Why do you think I like it? What does it make me think of?' 'It makes you think of God,' said a boy with simple gravity. 'Yes, it almost seems as if God held my hand as I hold this flower which he has made; it is beautiful. You may hold it for a moment and see what God thought; how perfect it is! What a color it has! How sweet a perfume!' So we should connect with the ideal of God the ideas of symmetry, beauty, color, and all that gives us delight in nature; we should connect with it, also, the ceaseless activity of creative love and force, for creation is quite plain to the child as a thing of the present and not of the past; he sees the grass growing beneath his feet, he sees the bare stems breaking into leaf, the bud opening into flower, and the seed ripening into fruit; this endless cycle of growth and renewal is, to his ingenuous mind, a revelation of an ever-present God. The creatures all speak to him of the God who made them; the baby came from God into the earthly home. The sunset, the stars, the clouds, the gathering snow, and the falling rain all go and come at God's bidding; and why should we not join the child in ascribing all these phenomena of nature directly to Him who is the origin and end of creation?" *

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* From "The Spirit of the New Education," by Louisa Parsons Hopkins. — Lee and Shepard, Boston. Other quotations from Mrs. Hopkins are taken from this book and from her "Observation Lessons for the Primary Schools," also published by Lee and Shepard.

The following poems and songs will be suited to this season:—

POEMS.

"Little Dandelion."—*Helen B. Bostwick.*
From "Child Life."
"The Violet."—*Jane Taylor.*
From "Young Folks' Book of Poetry."
"My Dandelion Girl."—*Clara Doty Bates.*
From "Grandma's Rhymes and Chimes."
"Jack-in-the-Pulpit."—*Clara Smith.*
From "Child Life."

SONGS.

"The Violet."—*Barry Cornwall.*
From "The Normal Music Course," Second Reader.
"The Violet."—
From "The National Music Course," First Reader.
"Little Dandelion."—*Mrs. Anderson.*
From "The Normal Music Course," Second Reader.

Lesson 16. **Observation of garden plants and wild flowers.**

The blossoms are now out and the children will be delighted to draw daisies in a tumbler, etc.

The following poems and songs are well adapted to the season:—

POEMS.

"Buttercups and Daisies."—*Mary Howitt.*
From "Child Life."
"A Lily's Word."—
From "Young Folks' Book of Poetry."
"Daisies."—*George Cooper.*
From "The Little Ones' Annual."
"Buttercups."—*Mrs. F. S. Lovejoy.*
From "The Little Ones' Annual."
"The Kaiser-Blumen."—*Celia Thaxter.*
From "Poems for Children."

SONGS.

"There's not a Yellow Buttercup."—
From "The Normal Music Course," First Reader.
"No Flower that Blows."—
From "The Normal Music Course," Second Reader.

STUDY OF ANIMALS.

Among the noblest in the land,
Though he may count himself the least,
The man I honor and revere
Who, without favor, without fear,
In a great city dares to stand
The friend of every friendless beast.
— *Longfellow.*

To teach every child in the land to be humane is to exterminate cruelty in the next generation. — *Ellen Snow.*

But each stage of the advancing season gives prominence to certain species, as to certain flowers. The dandelion tells me when to look for the swallow; the dog-toothed violet when to expect the wood-thrush; and when I have found the wake-robin in bloom I know the season is fairly inaugurated. — *John Burroughs.*

The bobolink has come, and, like the soul
Of the sweet season vocal in a bird,
Gurgles in ecstacy, we know not what
Save June! Dear June! Now God be praised for June!
— *Lowell.*

The occupation of the mind in its attention to the forms of nature which lie all about us, is a preventive of idleness and immoral or mischievous activities. — *Louisa P. Hopkins.*

In the lessons on animals it has been thought best to begin with one near and dear to the children. Children always enjoy stories of kitties and other pets whether told in prose or in verse. A little book published by Frederick Warne & Co. — "A Peep into Cat-Land" — will prove a mine of delight to the little ones.

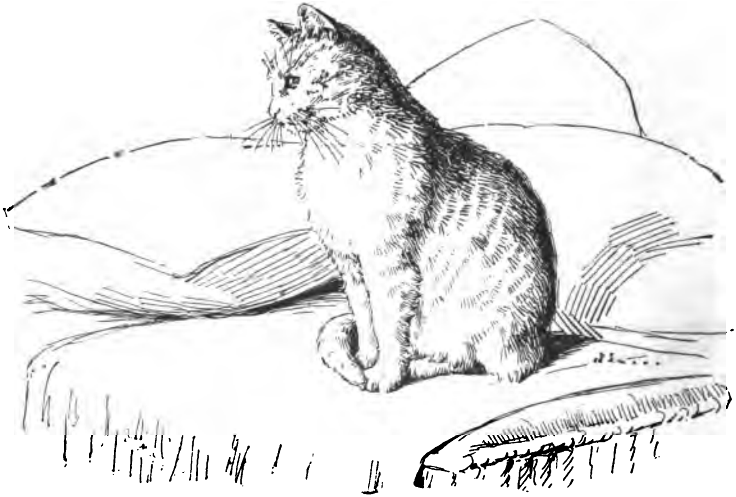
The following list of exercises, including an illustrative lesson, will show what may be done with beginners in this work. The place these lessons occupy in the course for the year will be found by referring to the schedule on pages 74–77.

Lesson 1. **The kitty-cat.**

Have a cat brought to school in a basket. Talk to the children about the surprise in store for them. Ask them to guess what may be in the basket.

Take the cat out of the basket, and talk with the children about its eyes, its claws, its fur.

Lead the children to tell you about cats or kittens that they have or that they have seen. They may have some very pleasant stories to tell.



Ask if they would like to have a picture of a cat drawn for them on the board and whether they would like to have the cat sitting or standing. Draw a very simple picture of a cat sitting. Let the children draw pictures of cats that they have seen.

Do not criticise the children's drawings. The free, unconscious expression by the children is desired here.

The following poems and song will serve to keep the memory of this lesson: —

POEMS.

"Pussy's Class." — *Mary Mapes Dodge.*
From "Young Folks' Book of Poetry."

"Catching the Bird." — *Marian Douglas.*
From "Grandma's Rhymes and Chimes."

"Two Little Cats." — *Clara G. Dollivers.*
From "Grandma's Rhymes and Chimes."

"The Kitten's Foe." — *Mary C. Clark.*
From "Grandma's Rhymes and Chimes."

"A Boastful Puss." — *Mrs. Clara Doty Bates.*
From "Grandma's Rhymes and Chimes"

SONG.

"Pussy knows." —
From "The National Music Course," First Reader.

Lesson 2. **Study of dogs.**

If a small and quiet dog can be had, have one in the school-room; but the children can observe them outside and bring their stories as they did in the lessons in natural phenomena. Let the children draw pictures of dogs they know.

The following poems and songs will suggest others adapted to this lesson: —

POEMS.

"Little Gustava." — *Celia Thaxter.*
From "Poems for Children."

"Dog Prince." — *Mrs. Clara Doty Bates.*
From "Grandma's Rhymes and Chimes."

SONGS.

"I 've a Little Dog at Home." —
From "The National Music Course," First Reader.

"Fido and his Master." —
From "The National Music Course," First Reader."

Lesson 3. **Observation of turkeys, chickens, ducks, etc.**

At this season of the year there is considerable interest in these fowls as the subjects of feasts. Lead the children to think of all that is interesting about them. Let them draw pictures of fowls. Show them pictures of the hen, the turkey, etc. (Prang's Natural History Cards give very good colored pictures of all the domestic fowls, as well as of many animals.)

The poems given below are intended to give the children other thoughts of these birds than are usually stirred.

POEMS.

"Lost." — *Celia Thaxter.*
From "Poems for Children."

"The Motherless Turkeys." — *Marian Douglass.*
From "Child Life."

"The Orphan Turkeys." — *Mrs. H. E. Jenkins.*
From "Grandma's Rhymes and Chimes."

"One Old Hen." — *Marion Manville.*
From "Grandma's Rhymes and Chimes."

"The Chickens' Rights Appeal." — *Elizabeth A. Davis.*
From "Grandma's Rhymes and Chimes."

Lesson 4. **Observation of rabbits, squirrels, etc.**

These animals are often pets, and no doubt children will know of one or the other. Squirrels will be found in parks of any considerable size until very late in the fall. Let the children bring their stories of the animals, and after they are told, let the children draw pictures of the squirrels or rabbits they have seen.

The following poems and song will suggest others suited to the lesson: —

POEMS.

"The Falling Leaves." — *Gussie Packard Du Bois.*

From "Grandma's Rhymes and Chimes."

"The Mountain and the Squirrel." — *Emerson.*

From "Young Folks' Book of Poetry."

SONG.

"The Rabbit." —

From Frœbel's "Mother Play and Nursery Songs."

Lesson 5. Observation of the horse.

Let the children bring the stories of their observations, and let them draw the horse they like best.

The following poems may add to the lesson: —

POEMS.

"Old Dobbin." — *Eliza Cook.*

From "Child Life."

"Old Doll." — *Kate Upson Clark.*

From "The Little Ones' Annual.

Lesson 6. Observation of the cow.

Let the children tell what they have found out during the week, and draw the picture of a cow. The teacher might add a drawing in outline of a cow in a meadow. Show pictures of cows.

The following poems will interest the children in the life of this useful domestic animal: —

POEMS.

"Milking." — *Celia Thaxter.*

From "Poems for Children."

"The Cow-Boy's Song." — *Anna M. Wells.*

From "Child Life."

"The Frightened Cow." — *Kate Upson Clark.*

From "The Little Ones' Annual."

Lesson 7. **Observation of birds and their songs.**

This is the nest-building time. Lead the children to tell their observations of the nests and eggs, and then let them draw pictures of birds' eggs and nests. Let them draw the nests on branches and show the eggs in them.

The following poems and songs will serve to enliven the interest in the lives of the birds, and will lead the children to be more considerate of them: —

POEMS.

"Robin Redbreast." — *W. Allingham.*
From "Young Folks' Book of Poetry."

"Little Birdie." — *Alfred Tennyson.*

"The Bluebird." — *Emily Huntington Miller.*
From "Child Life."

"Tragedy." — *Celia Thaxter.*
From "Poems for Children."

"The Sparrows." — *Celia Thaxter.*
From "Poems for Children."

"Piccola." — *Celia Thaxter.*
From "Poems for Children."

"Perseverance." — *Celia Thaxter.*
From "Poems for Children."

SONGS.

"Brother Robin." — *Mrs. Anderson.*
From "The Normal Music Course," Second Reader.

"When the Merry Lark Doth Gild." — *Barry Cornwall.*
From "The Normal Music Course," Second Reader.

Lesson 8. **Observation of birds caring for their young, and of the songs of birds.**

Lead the children to watch the birds (without disturbing them) as they feed the young. Let them draw pictures of the birds caring for the little ones. Get accounts of the songs of the birds.

The following poems and songs will aid in interesting the children in caring for the birds: —

POEMS.

"Sing on, Blithe Bird." — *Wm. Motherwell.*
From "Child Life."

"The Brown Thrush." — *Lucy Larcom.*
From "Child Life."

"Birds in Summer." — *Mary Howitt.*
From "Young Folks' Book of Poetry."

"Bluebirds in Autumn." — *Celia Thaxter.*
From "Poems for Children."

"The Nightingale." — *Celia Thaxter.*
From "Poems for Children."

"The Wounded Curlew." — *Celia Thaxter.*
From "Poems for Children."

"Bob White." — *George Cooper.*
From "Grandma's Rhymes and Chimes."

SONGS.

"The Bird's Nest."
From "The National Music Course," First Reader.

"The Little Girl and the Robin."
From "The National Music Course," First Reader.

"Spring Voices." — *Coates Coll.*
From "The Normal Music Course," Second Reader.

"Spring — Cuckoo." — *Bowles.*
From "The Normal Music Course," Second Reader.

STUDY OF MINERALS.

I wrote the past in characters
Of rock and fire the scroll,
The building in the coral sea,
The planting of the coal.

Time and thought were my surveyors,
They laid their courses well,
They boiled the sea, and piled the layers
Of granite, marl, and shell.

— *Emerson.*

But if we feel it necessary to direct all this activity so as to secure more definite results of growth and knowledge, let us give the child a garden, and tools with which to work in it. He may dig, hoe, and rake; he observes and handles the soil, studies the loam, the sand, the gravel, pebbles and rocks. He collects and arranges these things; he compares one with another; he sees how they are produced, and how they are related to each other. — *Louisa P. Hopkins.*

Miss Buckley in her beautiful work, "The Fairy Land of Science," says: "No person is so independent as he who can find interest in a bare rock, a drop of water, the foam of the sea, the spider on the wall, the flower underfoot, or the stars overhead."

Let the children use that most glorious gift, the imagination, and even a piece of coal may become to them an object of delighted interest. They will spend pleasant hours in searching out some of the manifold uses to which iron is put in these busy and triumphant days when man subjects all things to his reign; and they will take an active human interest in those who "delve for gold," and the way in which the precious metals are worked into beautiful forms for use and ornament. Let them see, as Whittier did, —

"The gray rock touched with tender bloom
Beneath the fresh-blown rose of dawn."

Let them know something of the forces that smoothed and rounded the pebbles over which the brook "chatters and babbles" as it goes to "join the brimming river"; and of the work that even these tiny pebbles perform in Nature's great work-shop. It is Holmes who wrote,—

"Yon stream, whose sources run,
Turned by a pebble's edge,
Is Athabasca rolling toward the sun,
Through the cleft mountain ledge.

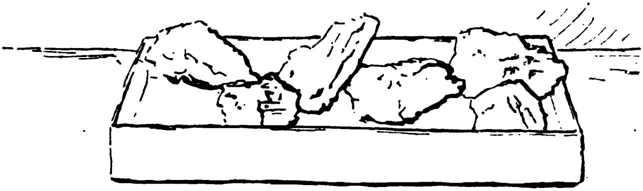
"The slender rill had strayed,
But for the slanting stone,
To evening's ocean, with the tangled braid
Of foam-flecked Oregon."

The following list of exercises will serve as suggestions for carrying out the work in classes.

Lesson 1. **Coal.**

Children in seats, a small piece of coal loosely wrapped in paper on each desk. The teacher has several pieces of coal, some matches, a stone, and a piece of glass—also a good-sized shallow box of wood. A large flat tin pan will answer.

Talk about the stone, the glass and the coal. Gradually lead to simple drawings like that of a box of coal, given below. This might be transformed by the teacher into a fireplace scene.



Frœbel, in his "Mother Play and Nursery Songs," has made the presentation of these more common things pleasing to the child. The song of "The Charcoal Burner's Hut" will bring delight to the children. The following poem will be also a pleasure.

"Cradle Song."—*R. W. Gilder.*

From "Open Sesame." Vol. I.

Lesson 2. **Observation of gold and silver.**

The teacher should provide bits of ore and objects made of gold or silver. Lead the children to see both use and beauty in the metals. Let them draw a picture of the ore or of an object made of silver (mug, cup, etc.).

POEMS.

"Lessons from the Flowers."—
From "Young Folks' Book of Poetry."

"Pretty Is That Pretty Does."—*Alice Cary.*
From "Young Folks' Book of Poetry."

"The Nightingale."—*Celia Thaxter.*
From "Poems for Children."

Lesson 3. **Observation of iron, copper and other common metals.**

Ask the children to bring objects made of iron, copper, etc., if possible. Provide pieces of ore and objects made of these metals. Let the children tell not only their observations of these objects but of those outside. Encourage the further observation of the use of the metals. The locomotive is dear to the hearts of all boys,— they can make a picture of this, and thus illustrate the use of both iron and copper. Let the children draw other objects of iron or copper.

POEMS.

"The Village Blacksmith."—*Longfellow.*

"Old Ironsides."—*O. W. Holmes.*

The following song will suggest the use of coal in working iron: —

"The Charcoal Burner's Hut."
From Frœbel's "Mother Play and Nursery Songs."

Lesson 4. **Observation of stones and pebbles.**

Provide material and also ask the children to bring pebbles, bits of stone, etc. Lead them to think how pebbles are made. Helpful suggestions will be found in "Guides for Science Teaching," No. 1; "About Pebbles," by Prof. Alpheus Hyatt. D. C. Heath & Company, Boston.

POEMS.

"I am a Pebble." "The Origin of the Pudding Stone."—*O. W. Holmes.*

APPENDIX II.

OTHER ILLUSTRATIVE DRAWING.

> For as with words the poet paints, for you
> The happy pencil at its labor sings,
> Stealing his privilege, nor does him wrong,
> Beneath the false discovering the true,
> And Beauty's best in unregarded things.
>
> — *Lowell.*

But if you wish to learn drawing that you may be able to set down, clearly and usefully, records of such things as cannot be described in words, either to assist your own memory of them, or to convey distinct ideas to other people; if you wish to obtain quicker perceptions of the beauty of the natural world, and to preserve something like a true image of beautiful things that pass away, or which you must yourself leave; if, also, you wish to understand the minds of great painters, and to be able to appreciate their work sincerely, seeing it for yourself, and loving it, not merely taking up the thoughts of other people about it, — then I can help you, or, which is better, show you how to help yourself. — *Ruskin.*

There has been a growing feeling for some time that the originality of children has not been given sufficient opportunity to show itself, when the drawing lessons require, as they generally must, the execution of certain definite things. It has been thought that an occasional exercise might be given in which the child would express his thought by drawing, without the slightest suggestion as to *how* he is to draw, and that, from this exercise, the thoughtful teacher would be able to judge how much the child sees, and to what extent he is applying that which he has gained in the regular drawing lessons.

The teacher will then be collecting material to aid her in developing the next steps in form study more clearly and strikingly. And in the next steps in form study the teacher will look forward to the following lesson in illustrative drawing, in order to collect material from the present work to aid in carrying the children farther in that which is to come. In this way the regular drawing will supplement and be supplemented by the illustrative drawing.

This work is in no sense separated from the regular drawing; it is only suggested as an additional means of securing growth in this subject by interesting the children, by allowing them freedom to express their own ideas, and by giving the teacher an opportunity to observe the individuality of the children.

It is hoped, too, that the teachers will find this example of integrating other things with drawing an illustration of how drawing may be integrated with other subjects in a way helpful to them.

In the first lessons the children should be given absolute freedom; the teacher should not even suggest the way they should place the paper or where they shall draw upon it. The two duties of the teacher are to present the matter well, and then to withdraw herself and watch for the outcome. In no other way can unconscious expression be secured; and in this early work, pure, childish expression is the only thing of value, since it is upon what the children already know that the future work must be built.

While the drawing is to be absolutely free from dictation, it is intended that the teacher shall, in every possible way, bring to the children's notice all that they can comprehend of good, *simple* drawing in the direction in which she wishes them to work. For example, if some child the teacher knows has drawn a good picture of a pail, a cup, or a box, she can show this picture and ask the children what they think of it, why they think it is good, etc. The teacher can also show a simple drawing of her own, either on the board or on paper and ask the children to tell her about it. In this case she would show the object as well as the picture; and if she sees there is a dawning appreciation of the things to be expressed, she can carry the talk quite a distance, allowing the children to show, by drawing, points they cannot make clear by language. It is not intended that the children shall copy the teacher's work, however, and great care must be taken lest in their quick imitativeness they do so. Another danger in this work is that the teacher may *tell* instead of drawing out what is in the children's minds — the work should be spontaneous and free.

Although the first drawings are crude (the illustrations in the stories show how crude, since they are reproductions of children's drawings) it is not intended that they shall remain so. Neither is it intended that they shall become conventional, after the work of the teacher or some pupil. It is felt that if the work is done in the right spirit, — the teacher getting as *near* to the children as possible, — the growth in observation, imagination, and *expression* will be surprising. It is proved every day that little children can see and express much more than has been thought possible. It would seem that all that is necessary to get children to draw is to give them good material and direction, — *not* dictation, for although dictation has its advantages, it should always be kept subordinate.

It should never be forgotten that most children love to draw, — not in the very conventional way they are sometimes required to draw, perhaps, but in a spontaneous way, — and this liking of theirs should be utilized in every possible way in the daily work in language, reading, etc.

The following outline gives suggestions as to what may be done in this direction. The outline is arranged in six groups, and each group is intended to furnish one lesson a week for six weeks, although the same line of work need not be continued for six consecutive weeks. In this as in other school work, the teacher should be governed by the school conditions, which vary with almost every school.

1. Reading of Simple Stories from Mother Goose.

Read very simple poems or stories to the children, — stories which have to do with things about them, — and ask them to make the pictures for the story; that is, illustrate it. The teacher may aid the children by showing them any object mentioned in the story, but the object must be shown in such a way that the children will not draw merely the object but will reach out to the part the object plays in the story or poem. This requires an exercise of the imagination, — just what is desired.

2 Talks About Pictures Brought by the Children.

An occasional talk about pictures will help to direct the attention of the children to the pictures around them in the school-room and at home, and, it is hoped, encourage them in their drawing. These pictures should be brought by the children and may be: —

(*a.*) Pictures of babies.
(*b.*) Pictures of baby animals — kitties, puppies.
(*c.*) Pictures of what the children like.

By carefully leading the children to see what is good, the teacher will be gratified to see that the class of pictures brought will steadily improve. On picture days the children will not be expected to draw, but will observe and talk about the pictures.

3. At the Discretion of the Teacher.

A third division of the work is left to the teacher's discretion. The kind of illustration will depend entirely upon the environment of the majority of the children composing the class.

4. Stories Containing Hidden Type Forms.

In this division of the work the teacher tells a story in which the children will find the type forms, but they should not be found by the teacher's showing or asking.

5. Talks about Pictures of Things Like the Type Forms.

This division takes up the observation and collection of objects like the type forms.

6. At the Discretion of the Teacher.

This division, like the third, is left to be filled with such exercises as the teacher feels will be best suited to the needs of the children.

Suggestions with regard to these different lines of work and lessons illustrative of three of the lines are given below.

SUGGESTIONS FOR THE ILLUSTRATION OF STORIES OR POEMS.

The stories and poems given below have been selected not only with a view to interesting the children, but with the thought that they present some salient points which the children may be able to illustrate.

Question the children a little before asking them to draw, thus calling their attention to the points to be illustrated.

As the children become more used to this work, their power of concentration will increase, and, if the story is carefully read, there will be no need of questions. The idea is that, while allowing the thought of the children as much freedom as possible, the children shall, at the same time, be given a correct idea of the direction in which they are to work.

LITTLE ROGER.

"Little Roger, up the long slope rushing
Through the rustling corn,
Showers of dewdrops from the broad leaves brushing
In the early morn.

"At his sturdy little shoulder bearing,
For a banner gay,
Stem of fir, with one long shaving flaring
In the wind away." —*Celia Thaxter.*

SUGGESTIONS FOR FURTHER WORK.

The following poems and story, with suggestions for leading the children to see what might be illustrated in them, may be of assistance to teachers in carrying this work further. It is hoped that the work will excite the observation and the imagination of the children so that they will be able to do better and more appreciative work each week. Unless there is growth in attention, expression, and enjoyment, the work will miss its purpose.

THE KITE TED MADE.

The sticks he made were light;
  He tacked them into place;
And he bound a string cord tight
  From end to end for a brace;
And he covered it over with paper white,
  And on that drew a face.

The twisted bits he tied
  In a long and jagged trail,
And held aloft with pride,
  For that was the kite's tail;
At length a string was all beside
  He needed for a sail.

This found, he took it out
  Into a vacant lot,
Ordering the little boys about,
  As, pray, why should he not?
While they with eager whoop and shout,
  Gathered about the spot.

But the kite, alas! it lagged,
  And would not lift nor fly;
Ted tried to run — it dragged,
  However he might try;
And the long tail of which he bragged
  Trailed broken and awry.

"What ails the thing?" cried Ted.
Piped little Jo, "I know" —
Black face and kindly head,
And black, bare feet had Jo —
"The reason it don't go ahead
Is 'cause the wind don't blow."

— *Mrs. Clara Doty Bates.*

From "Grandma's Rhymes and Chimes."

How does one go to work to make a kite? What has to be done to make it fly? Can you make a picture of Ted's kite?

JOHNNY'S PICTURE.

Johnny was not quite five years old when his mamma said to him one morning, "My dear, if you will be a good boy all the forenoon, and do not disturb me while I am at work, you may go over to Aunt Jane's after dinner, and have your picture taken."

Aunt Jane was a photographer, and Johnny knew what that meant.

He thought it over, and after awhile said, "Mamma, may I have it taken just as I want it? I mean may I stand just as I please?"

"Yes," said mamma; "you may stand just as you like."

"I am afraid," said Johnny, "that auntie will not want me to do that."

They then agreed that mamma should write a note, telling Aunt Jane to allow him to take whatever position he desired.

Everybody laughed when they saw the picture.

I do not believe you could guess how he had his picture taken.

He just stood straight up with his back to the camera.

There was the picture, but no one could tell whether it was Johnny or some other little boy.

He said he could see his face in a looking-glass, and he had often wondered how he looked when he turned his back.

It was a long time before this little boy heard the last of his queer picture.

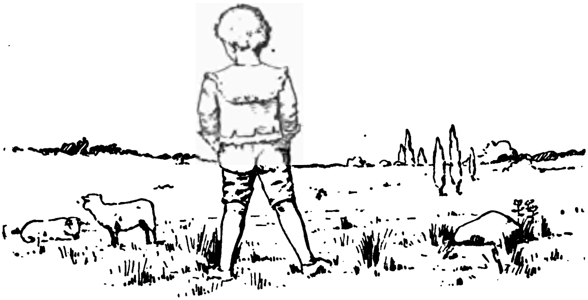
It was shown to so many people that he finally said, "Mamma, suppose we hide that back picture."

"All right," said mamma; "it is yours, and you may do whatever you like with it."

He then put it where it could not easily be found, but did not destroy it. — *Mrs. J. S. Lowe.*

From "The Little Ones' Annual."

How do you think Johnny looked when he stood with his back toward people? Can you show me with your pencil and paper?



THE RACER.

When Bert was three years old, I guess,
And wore, like little girls, a dress,
He rode his papa's cane;
He'd shout "Get up! Galang! Galang!"
Whip up his pony with a string,
And run with might and main.

When he was five, he had a horse,
A rocking animal of course,
With stirrups at the side,
And real hair tail hung on behind.
He whipped him, too, with air unkind,
So fast he wished to ride.

He's seven now, and goes with speed
Upon a big velocipede,
With shining wheels and braces;
So fast his feet, so firm his grip,
With need of neither spur nor whip,
He beats in all the races.

— *Clara G. Dolliver.*

From "The Little Ones' Annual."

How did little Bert ride first? Did you ever see anybody ride that way? Show me how he looked.

What did Bert have to ride on when he grew bigger? Which was nicer, the cane or the rocking-horse? Why? Can your pencil tell me all about Bert on his rocking-horse?

How did Bert ride when he grew to be a tall, strong boy so he could play on the sidewalk? Which do you think was the nicest way of all to ride? Can you make a picture of that, too?

The following stories and poems, with others found in "Babyland," "Our Little Ones," "Little Men and Women," and other children's magazines, will give ample material for the work in the illustration of stories.

STORIES.

"Aunt Patty's Daisy." — *Mrs. Mary Johnson.*
From "The Little Ones' Annual."

"Dicky's True Story." — *Ellen N. Knox.*
From "The Little Ones' Annual."

POEMS.

"The Fireman's Horses." — *Lavinia S. Goodwin.*
From "The Little Ones' Annual."

"The Farm Breakfast." — *Marion Douglass.*
From "Grandma's Rhymes and Chimes."

"Betty B." —
From "Grandma's Rhymes and Chimes."

"Little Nannie Counts Her Babies." — *Geo. S. Burleigh.*
From "Grandma's Rhymes and Chimes."

SUGGESTIONS FOR THE STUDY OF PICTURES ON "PICTURE DAY."

For developing in the child a liking for that which is beautiful and true, or so beautiful that one wishes it might be true, the "Picture Day" will be found helpful. On these days it is suggested that the children be asked to bring: —

1. Pictures of babies —as "the baby" is so dear to the child's heart.
2. Pictures of baby animals — kitties and puppies, usually appealing irresistibly to the affections of the child.
3. Pictures of things the children like best.

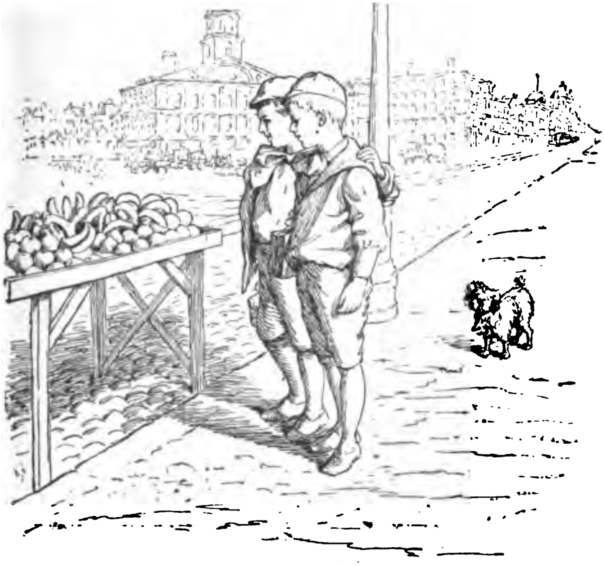
For all of these lessons the teacher should have a good assortment of appropriate pictures, as in many cases the pictures brought will not be what the child really likes nor what is fitting to present to the children for study. This will sometimes be the case because of the indifference of the parents, and sometimes because of their inability to supply the child with what he needs.

It is not intended that the children shall draw in these lessons. The teacher will wish to see what the children bring, and also to observe what they find in the pictures. She will wish, too, to lead them to find and enjoy what is best in the pictures, and to reject such pictures as tell a story of wrong and crime. These latter pictures can be exchanged for better ones in the teacher's collection.

SUGGESTIONS FOR EXERCISES ON DAYS LEFT TO BE FILLED AT THE TEACHER'S DISCRETION.

It is felt that the teacher, knowing the surroundings of the children, will wish an occasional opportunity to lead them along this line of work in a way more intimately applicable to those surroundings than can be suggested in a course of study. The work in illustrative drawing should not be considered as separate from the regular drawing, but rather a necessary part of the subject, giving, as it does, an opportunity to each child to work out his own individuality. And if the teacher carefully observes what the children do in this freer work, she will no doubt find reason for corrections of her previous teaching in form study. The improved work in form study will in turn re-act upon the illustrative drawing. The following suggestions give the direction the work might take :—

1. The children may bring objects to draw, as dolls, toys, and things resembling the type solids.



2. The children may draw from memory something they saw on the way to school, things that belong in the kitchen, things that are used on the table, things that are used in the garden, etc.

3. Let the children draw objects about the school-room.

4. Show a good but simple picture. Let the children look at it earnestly a moment, then remove it. Let them draw what they remember of it.

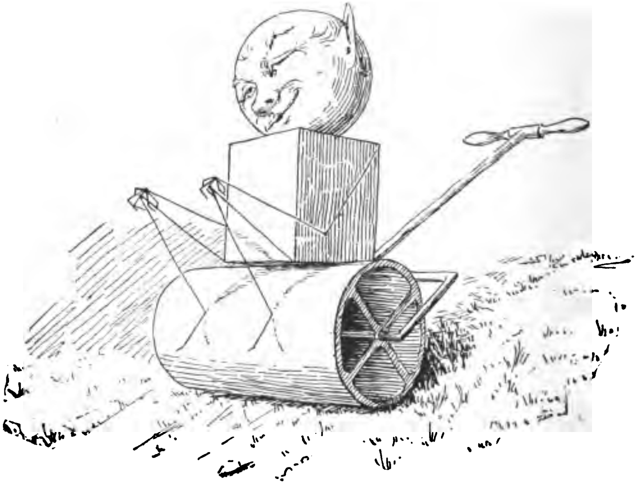
5. The children may draw things the carpenter uses, things the blacksmith uses, etc.

6. Let the children imagine and draw the type forms in action, — as the sphere and cube riding down hill on the cylinder, the sphere running away from the cube, the cylinder running after the sphere, leaving the cube behind.

7. One child may impersonate a man sawing wood, a man shoeing a horse, etc., and let the rest draw his picture.

8. The children may draw what they can see from the window.

9. Let them draw something they have seen in other school-rooms, — the room where a brother or sister is, the master's room, etc.



SUGGESTIONS FOR LESSONS ON HIDDEN TYPE FORMS.

The stories containing hidden type forms will not only serve to interest the children, but they will also prove an excellent form of review, showing the teacher how much the children are observing *form*. It is not intended that the teacher shall so emphasize the presence of the forms that the children will not fail to see them, but that the story shall be told casually — the teacher watching to see if the form is recognized.

One or two titles of stories may prove suggestive, as "Brave Charlie," a story of building and drawing. The bonny, brown boy blowing bubbles.

SUGGESTIONS FOR ANOTHER KIND OF "PICTURE DAY."

On this "Picture Day" the children are to bring pictures of things like the type solids. Do not have these pictures pasted on a sheet, as the discrepancy in size may mislead the children, — as a picture of a mug actually larger than that of a street roller.

ILLUSTRATIVE DRAWING

FOR

TEACHERS.

For some years attempts have been made to introduce blackboard drawing by the teachers into the lowest grades of the public schools, and the attempts have been more or less successful. Its purpose has been largely to picture the thoughts of the children, or to afford material for observation and reading lessons.

It is doubtful, however, whether this work has been carried on in such a way as ever to meet the ideals of those who started it, — they believing that, next to the live animal or flower, the image of these growing under the teacher's hands would be the greatest inspiration of the children's thoughts.

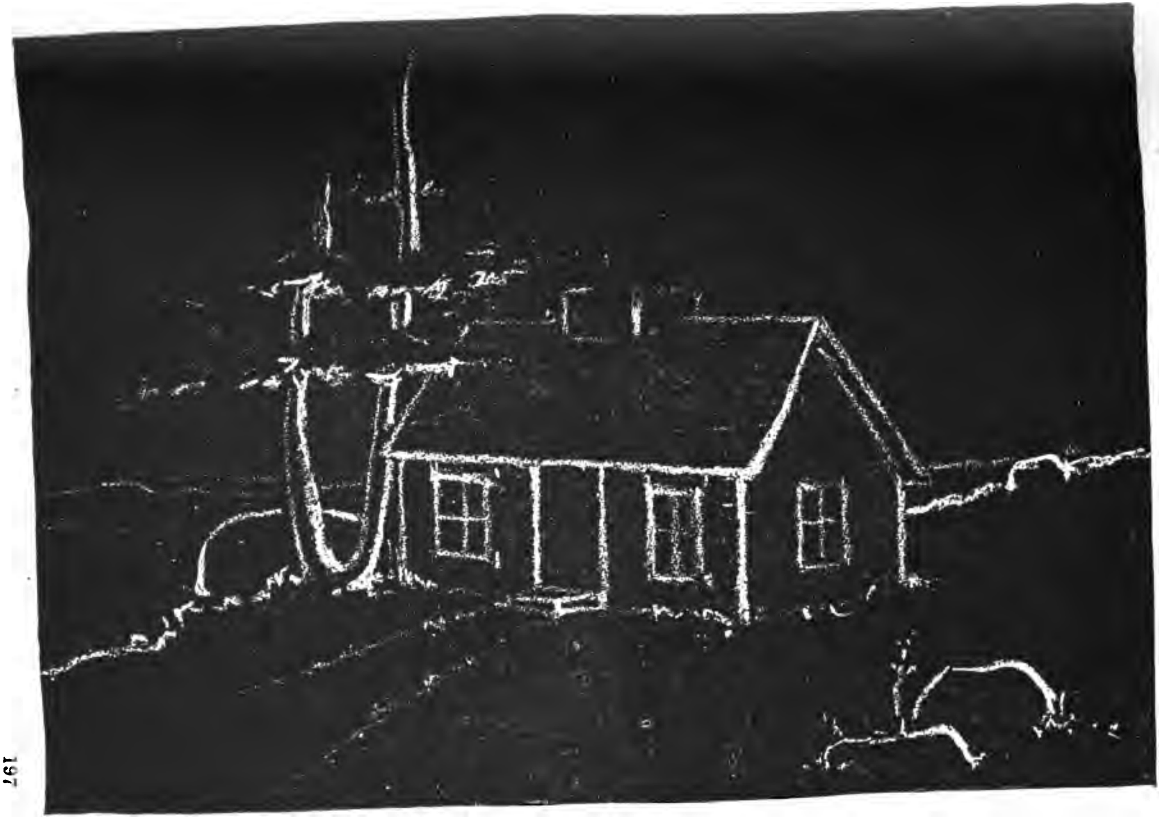
Enough has now been done in this subject to make it possible to review the past with profit to the future. It is felt that, as is thought necessary in other school subjects, a different view of this subject must be taken, and that, instead of the drawing being done in a way to leave an impassable gulf between that of the teacher and the pupil, the work of integration shall here have sway and the drawings of teacher and children shall supplement each other.

The growth of the subject of drawing in the public schools would seem to warrant the belief that the teachers will now be able to prepare themselves to draw before their pupils correctly, but in a very simple way, such objects as they ask the children to draw, or such as it would be reasonable to expect in illustrating reading, language, or observation lessons fifteen or twenty minutes in length.

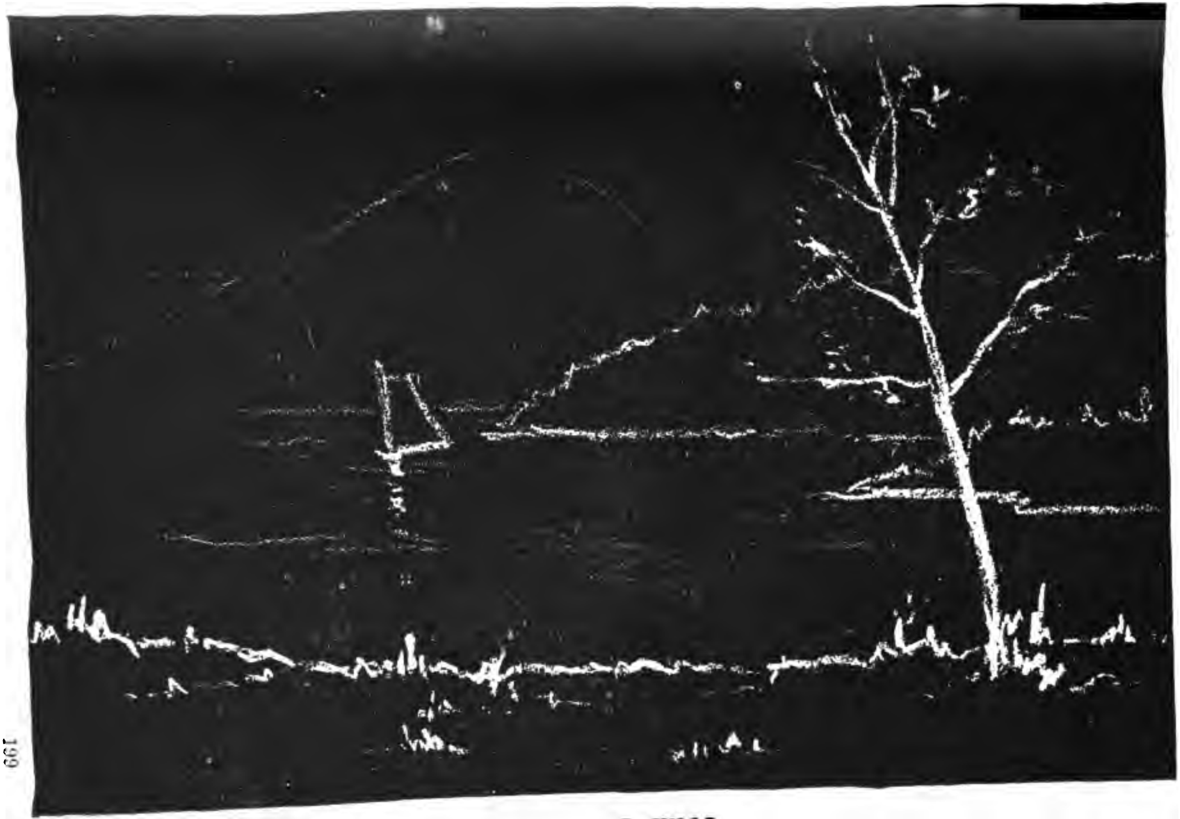
It is hoped, also, that it will be possible to raise the illustrative work of the children to a far higher standard than has ever been reached before, and it is thought that the teacher's own work may be a valuable assistant to this end. If the teacher, after having watched the free work of the pupils, can show them some point *almost* attained by them, by making a drawing on the board and leading the children to talk freely about it (as in the lesson on the Kitty-Cat), and show her or tell her how to make it better, her greater ability in drawing will enable her to lift and inspire the children to do more thoughtful and careful work. This should, however, be done with the greatest care, lest the teacher impose her own ideas upon the children to a greater extent than is wise or profitable.

It has been found that artists of considerable practice have more or less difficulty in translating a lead-pencil drawing, a pen-and-ink drawing, or any illustration of black or gray on white, into a good blackboard drawing, as in the latter the process is reversed, and white upon black is used. It is found particularly difficult to translate the values of the black on white into white on black. Therefore illustrations are given of white on black.

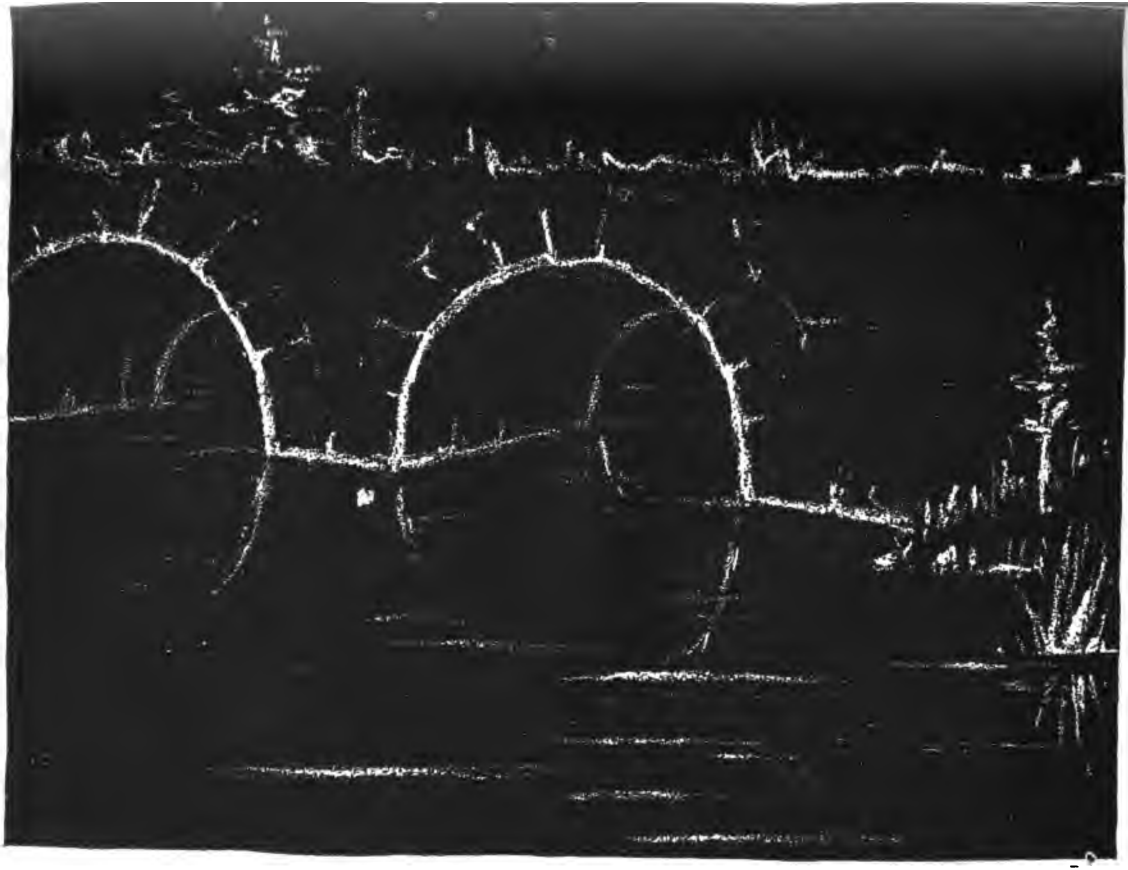
Suggestions are given for blackboard drawings to be added by the teacher (in a way similar to that suggested in the "Kitty-Cat" lesson) after the children have drawn theirs for the illustration of "Brave Charlie," "The Kite Ted Made," and "Johnny's Picture." The house is what the teacher might draw for Charlie's house; the hills are in a pasture the teacher remembers, — a different pasture from Charlie's, — where she used to go for acorns and beech-nuts; the bridge and brook are the ones described by Charlie; the field is the one where Ted tried to fly his kite; and the boy now standing in it is Johnnie. (The children are asked to draw a boy standing in this way in the regular Form Study.)



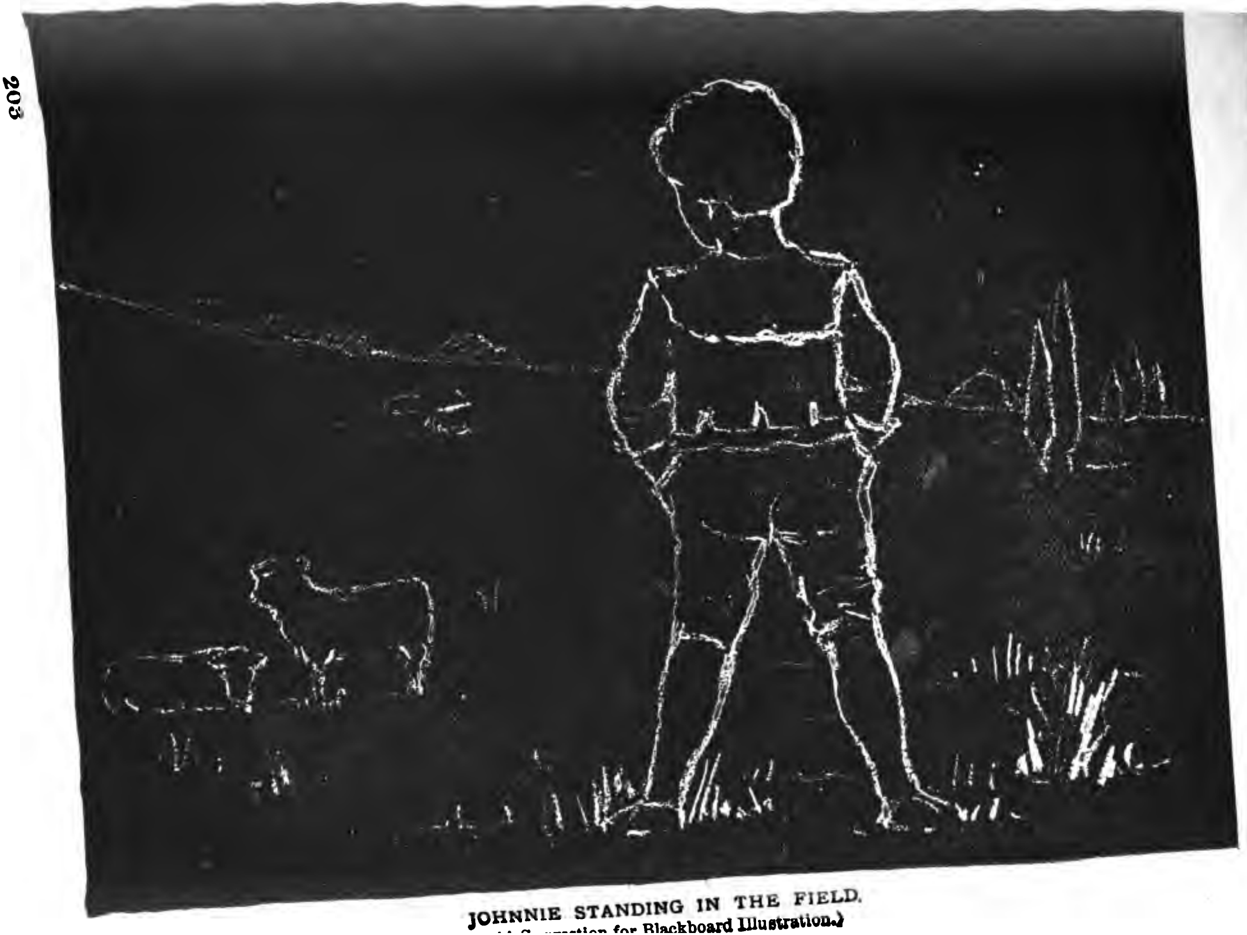
A HOUSE, TREES, AND DISTANT HILLS.
(A Suggestion for Blackboard Illustration.)



A LAKE AND HILLS.
(A Suggestion for Blackboard Illustration.)



A BRIDGE. ARCHES, AND A STREAM.
(A Suggestion for Blackboard Illustration.)



JOHNNIE STANDING IN THE FIELD.

for Blackboard Illustration.)

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